TECHNOLOGY DEPARTMENT

MOTOR AGE

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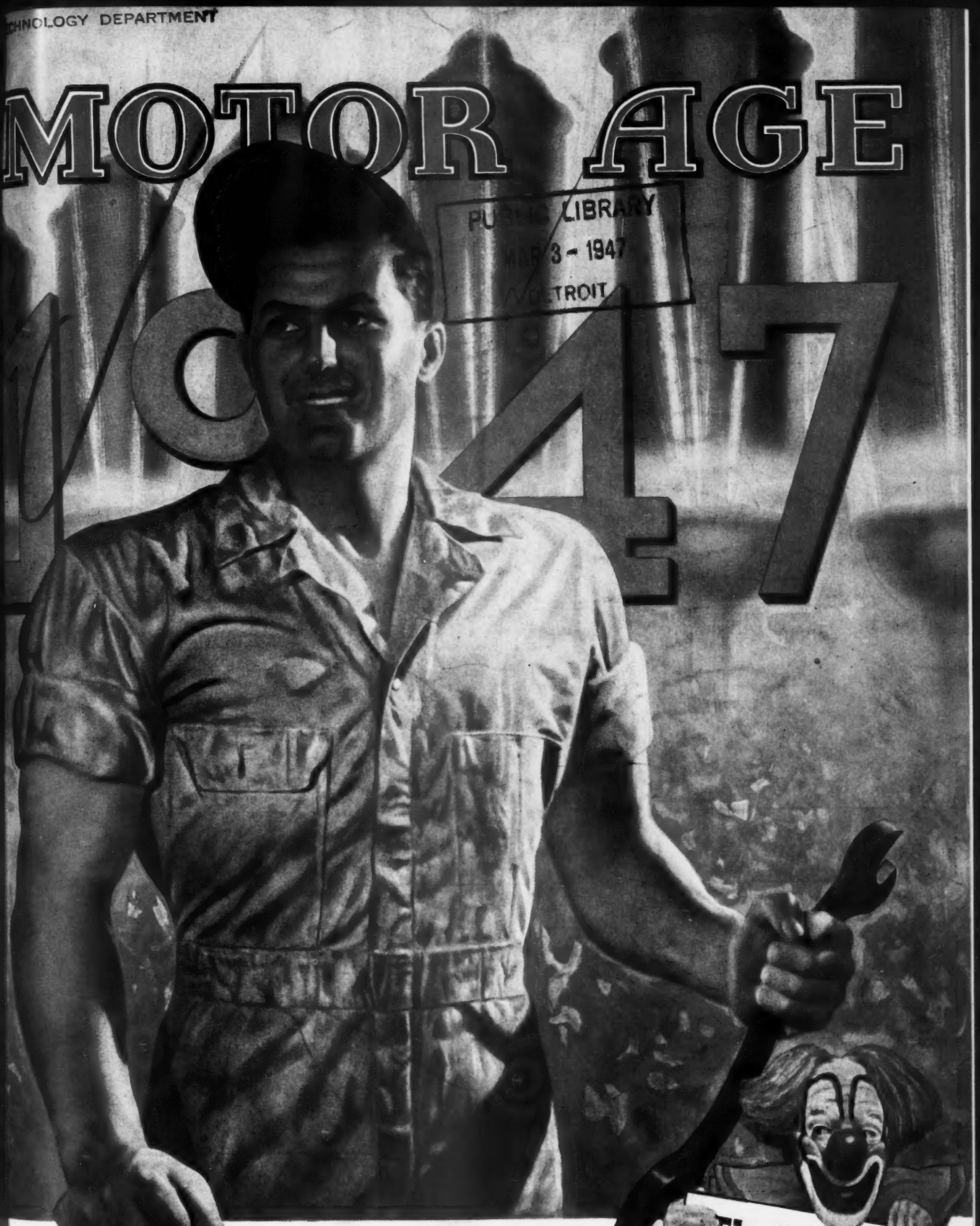
DETROIT

1947



A.S.I. SHOW REVIEW NUMBER

JANUARY 1947 ⏻ A CHILTON PUBLICATION

Soft Pressure does it...

Oil control is easy and positive with *soft pressure* Steel-Vents. Long life is assured, too, by the employment of steel segments held firmly but gently on the cylinder walls.

That's why so many Hastings Steel-Vent "motor engineered" sets are being installed in rebores and re-sleeves as well as in extreme tapers.

SOFT PRESSURE DOES IT — IN REBORES, TOO

Seven years of Steel-Vent satisfaction stand behind this testimonial from a large trucking and warehouse company: "We operate 103 pieces of equipment and have used Hastings Steel-Vent sets for over seven years in re-ring and rebore jobs with gratifying results. Steel-Vents give us longer life and less cylinder wall wear."

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN • Hastings Ltd., Toronto

TWO GREAT RADIO SHOWS

"I Deal in Crime"
Saturday Nights • ABC

"Adventures of Michael Shayne"
Tuesday Nights • MBS
(Wed. night on West Coast)

HASTINGS STEEL-VENT

PISTON RINGS

U. S. PAT. 2,148,997

TOUGH ON OIL-PUMPING **GENTLE** ON CYLINDER WALLS

TRANSMISSIONS
TIMING CHAINS
OVERDRIVES
SYNCHRONIZERS
CLUTCHES
UNIVERSAL JOINTS
DRIVE SHAFTS
CARBURETORS
RADIATORS
TAPERED WHEEL DISCS

19 of the 20 *makes of motor cars embody essential parts* made by BORG-WARNER!

ENGINEERING
B-W
PRODUCTION

Executive Offices, Chicago. These units form Borg-Warner: BORG & BECK • BORG-WARNER INTERNATIONAL BORG WARNER SERVICE PARTS • B-W SUPERCHARGERS, INC. • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR STOVE • INGERSOLL STEEL • LONG MANUFACTURING • LONG MANUFACTURING CO., LTD. • MARBON • MARVEL-SCHEBLER CARBURETER • MECHANICS UNIVERSAL JOINT • MORSE CHAIN • MORSE CHAIN CO., LTD. • NORGE • NORGE-HEAT NORGE MACHINE PRODUCTS • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS WARNER GEAR • WARNER GEAR CO., LTD. • WISCONSIN TRANSMISSION

YES, the star in Texaco's greater-than-ever advertising plans for the new year . . . and a business man people are going to hear a great deal about . . . *is the Texaco Dealer!*

Every Sunday evening, millions of car owners get better acquainted with *him* when Eddie Bracken and an all-star cast go on the air from coast-to-coast.

Millions more hear about *him* every Saturday afternoon when Texaco broadcasts great operas direct from the stage of the *Metropolitan Opera House.*

Day after day during the coming year powerful Texaco advertising in leading magazines, farm journals, and on thousands of billboards, will help keep *his* old customers sold and send new customers *his* way.

In addition to this vast, national advertising program, Texaco makes available to Texaco Dealers all kinds of local selling aids such as window displays, calendars, direct mail campaigns, book matches and many others.

It's the beginning of another great year for Texaco Dealers—one that will find them *busier dealers* than ever before.

THE TEXAS COMPANY

A Great Line-up for **TEXACO DEALERS**

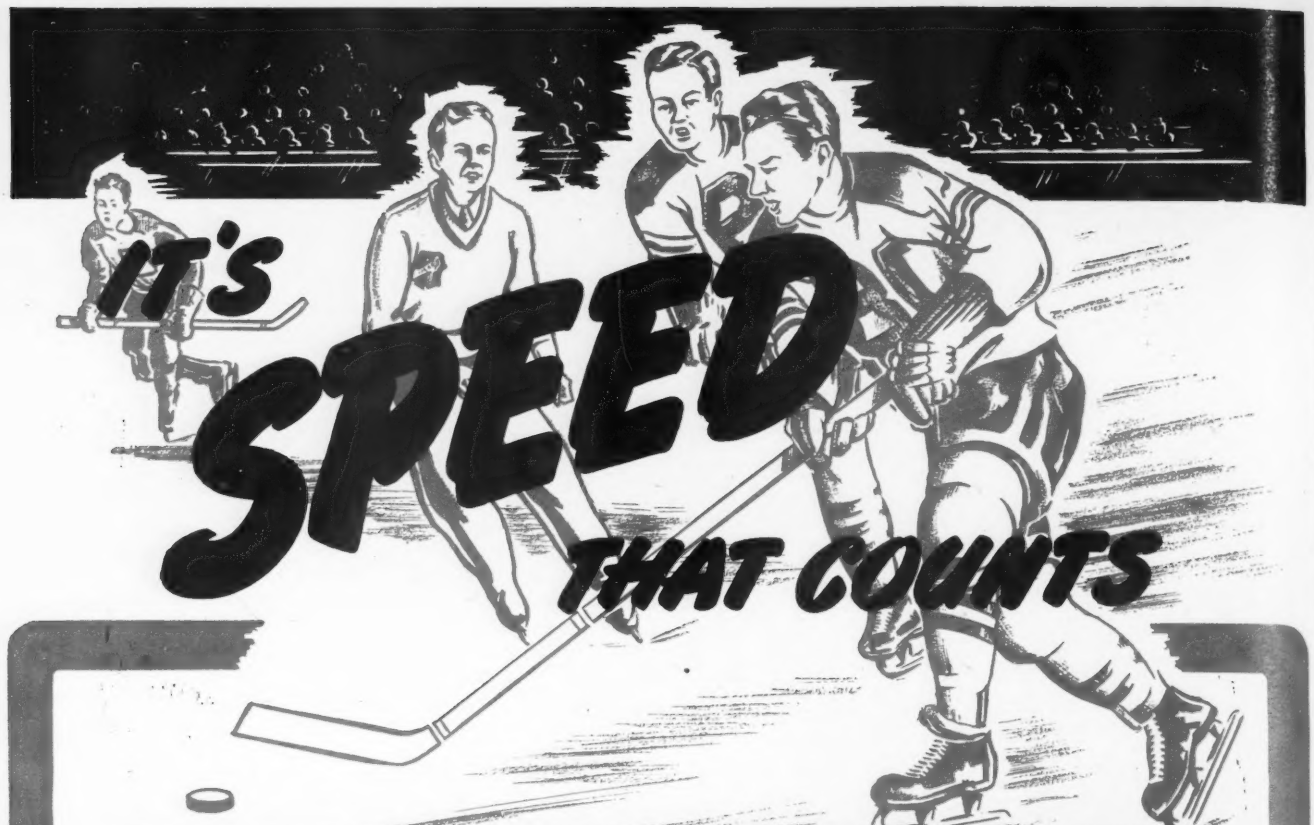
Sky Chief and **FIRE-CHIEF** GASOLINES

HAVOLINE *and* TEXACO MOTOR OILS • MARFAK

CHASSIS LUBRICATION • REGISTERED REST ROOMS

Tune in: TEXACO STAR THEATRE presents the Eddie Bracken show every Sunday night.
METROPOLITAN OPERA broadcasts every Saturday afternoon. See newspapers for time and stations.

PERMATEX
Quality
CHEMICAL PRODUCTS



CIRCO VAPOR DEGREASING

Cleans Parts in 3 Minutes . . . Puts Extra Profits in Your Cash Drawer

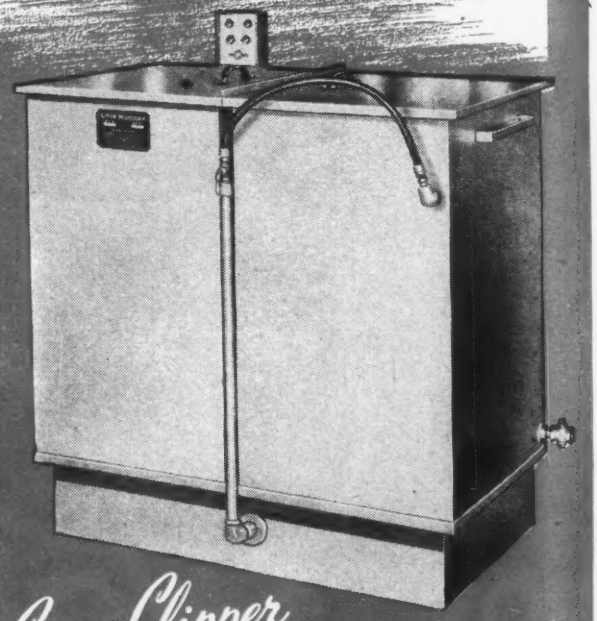
Your "make or break" item on repair work is always time. Trying to match old-fashioned parts scrubbing with the quick, thorough cleaning of Circo Degreasers is like taking money right out of your pocket.

The Circo Clipper Degreaser, like other Circo units, is a tremendous time saver. It completely cleans dirty, greasy parts with hot solvent vapor—leaves them thoroughly dry—then shuts itself off—and does it all automatically. All the mechanic has to do is put in the parts, push a button and take them out at his convenience—any time after about 3 minutes, depending upon the size of parts to be cleaned.

With a Circo Degreaser on the job, the mechanic is completely free to spend all his time on profitable repair work—increase his own commissions, and return a much larger profit per job for your shop.

The Circo Clipper leaves no dirty mess around the shop. Solvent is non-inflammable, non-explosive, and will not in any way injure any metal.

There is a Circo cleaning unit that fits your exact needs. Write for folder.



Circo Clipper

DEGREASER

Will handle complete engine block. Embodies 5 different cleaning methods—vapor cleaning (automatic); drying (automatic); spraying (automatic); dipping and soaking.

THERE'S A CIRCO FOR EVERY METAL CLEANING JOB

Vapor Degreasers
Hydro Spray Cleaners
Dee Tee Cleaners
Flat Top Disassembly and Cleaning Table
Brake Shoe Tumbler
Solvents

CIRCO PRODUCTS *Company*

12117 BEREA ROAD CLEVELAND 11, OHIO

WEIDENHOFF

ENGINE ANALYZER — *Model C-1017*

Weidenhoff Model C-1017 engine analyzer

Here's the Number 1 Requirement of Modern Automotive Service. Makes All Important Tests—Both Engine and Electrical.

Tune-up service is easy to do and sell with this analyzer and as a profit builder it has no equal because tune-up ranks near the top of all service work.

This analyzer locates faults quickly and shows if adjustments or repairs have been correctly made in accordance with manufacturer's specifications.

Consists of five portable test units, together with a panel mounted electronic tachometer all neatly housed in a sturdy, attractively colored welded steel cabinet. Plan your tune-up department around this equipment, built by the pioneer builder of tune-up equipment.

The five individual units consist of ammeter, voltmeter, rheostat; condenser and resistance tester; coil and ignition tester; contact dwell indicator (for ignition distributors) and vacuum, compression and fuel pump tester. The tachometer makes accurate comparative performance tests of new coils, breaker points, spark plugs, ignition cables and many others. Ideal for adjusting carburetors and governors. Analyzer rolls on large casters. Has large compartments for adapters and tools. Leads are pulled out through slot in bench top and hidden when not in use.

See your Weidenhoff Distributor or Write to Factory.

ENGINE ANALYZERS • BATTERY CHARGERS • MAGNETO TESTERS

JOSEPH
WEIDENHOFF
INC.
CHICAGO 24, ILLINOIS

AUTOMOTIVE SERVICE WEIDENHOFF EQUIPMENT AVIATION

TEST BENCHES • ELECTRICAL TESTING AND SERVICE EQUIPMENT

MOTOR AGE, Vol. LXVI, No. 2. Published monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39, Pa. Entered as Second-Class Matter December 27, 1935, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, Mexico, United States Possessions, and all Latin-American countries, $2.00 per year. Canadian and foreign, $3.00 per year; single copies, 25 cents.

Every CAR & TRUCK NEEDS THIS REVOLUTIONARY FUEL FILTER

SELL ONE WITH EVERY CARBURETOR, FUEL PUMP and TUNE-UP JOB

AIRTEX

GASOLINE FILTER with Pulsation DAMPER

The only filter equipped with PULSATION DAMPER, self-cleaning action, and porous metal filtering element.

- Acts as shock absorber in the fuel line, overcoming fuel pump pressure pulsations and delivering a SMOOTH, STEADY FLOW OF GASOLINE to the carburetor.
- Removes dirt, lint, water, abrasive particles, and other foreign matter from the gasoline.
- Prevents motor failure due to carburetor clogging and flooding. Reduces wear and tear on carburetor, engine and fuel pump.

ATTRACTIVE DISPLAY ASSORTMENT OF 12 FILTER-DAMPERS

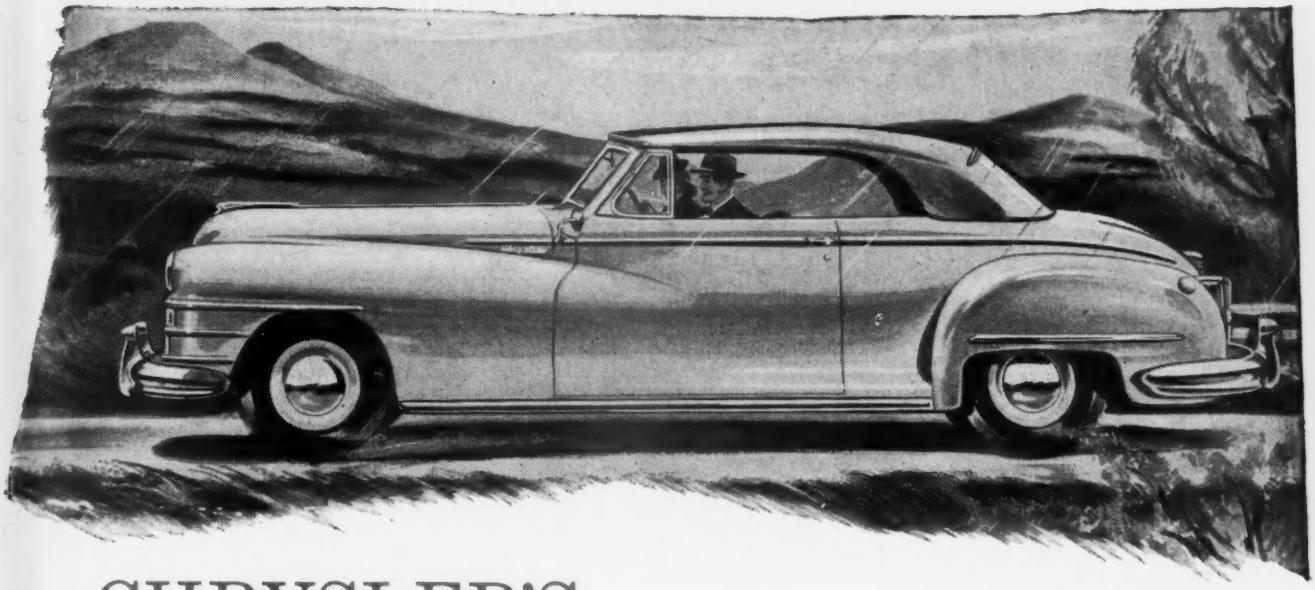
Contains 5 types necessary to service over 90% of motor vehicles.

ORDER FROM YOUR JOBBER

AIRTEX AUTOMOTIVE DIVISION Chefford Master Mfg. Co., Inc. FAIRFIELD, ILLINOIS

Sell AIRTEX Fuel Pumps, equipped with 50,000 Mile Guaranteed Diaphragms

No. 1 of a Series of Messages to **CHRYSLER DEALERS:**



CHRYSLER'S amazing OIL FILTER...

is exclusive with Chrysler cars

Like the other pioneer developments of Chrysler engineering, the Chrysler Oil Filter, a feature exclusive with Chrysler cars, is "money-in-the-bank" for Chrysler dealers. As you know, it alone among oil filters cleanses every drop of motor oil as the car operates. Adds importantly to engine life! Helps avoid major repairs! Serves among many Chrysler features to keep *Chrysler in first place as the car most owners want to buy again.*

Engineering like this is the most important backing a dealer can have. It will grow increasingly important as production increases and the job of holding customers begins again.

A Chrysler dealer can analyze his car part by part with a lot of personal satisfaction... because part by part it is engineered in a way that assures continuing success to the men who sell Chrysler.

CHRYSLER DEALERS GET THE GOOD THINGS FIRST!

This kind of talk is "profit insurance" for you!

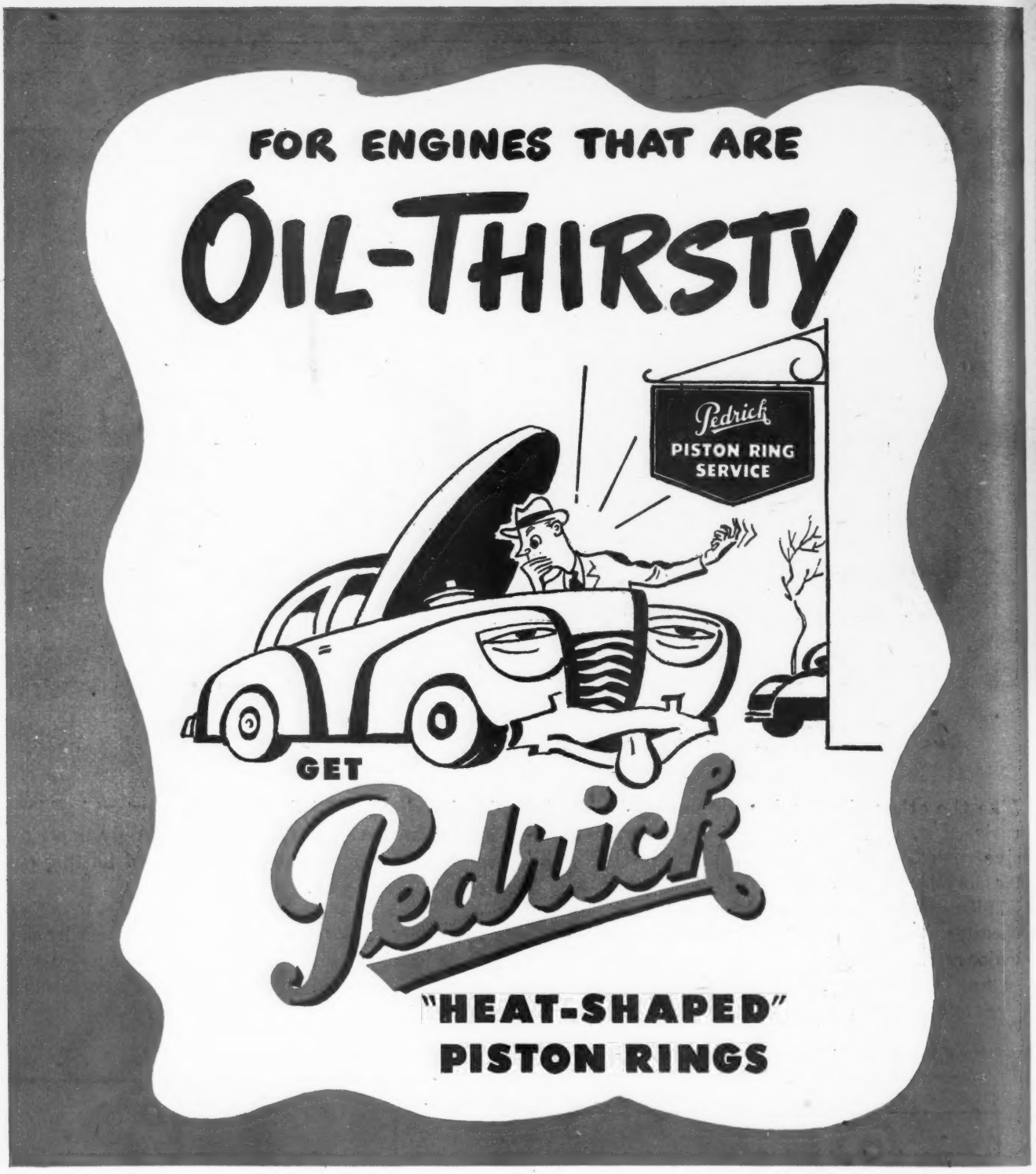
"It is my opinion that the new Chryslers are the best cars on the street for appearance, performance and dealer tie-up." W. E. B., Chicago

"I drive a '46 Royal. I average about 4,000 miles every month. Have driven a new car every year except for war time. I have never driven one quite as good as my Chrysler. I hope they are all as good as this one." G. N., Los Angeles

"I have owned about 10 different makes of cars and this is my first Chrysler product and I will say I have never owned a car I liked so well. I have been from here to Oregon 3 times and back. I said when I first got it that it was just a dream car and it just seems to float through the air and all my friends say the same. I have 13,000 miles on it and it still runs perfect." K. P., Los Angeles

Chrysler

CHRYSLER
DIVISION OF
CHRYSLER CORPORATION



Keep your customers satisfied! Recondition their cars and trucks with "Heat-Shaped" piston rings. "Heat-Shaping" gives the greatest assurance of cutting down on oil, increasing gas mileage, providing more power and pickup, and adding to engine life. *Only* PEDRICK piston rings are "Heat-Shaped"—a process that produces exactly the right tension around the entire circumference of the ring. Ask your jobber salesman for PEDRICK rings in *guaranteed* Engineered Sets. WILKENING MANUFACTURING CO., Philadelphia 42, Pa. *In Canada:* Wilkening Manufacturing Co. (Canada) Ltd., Toronto.

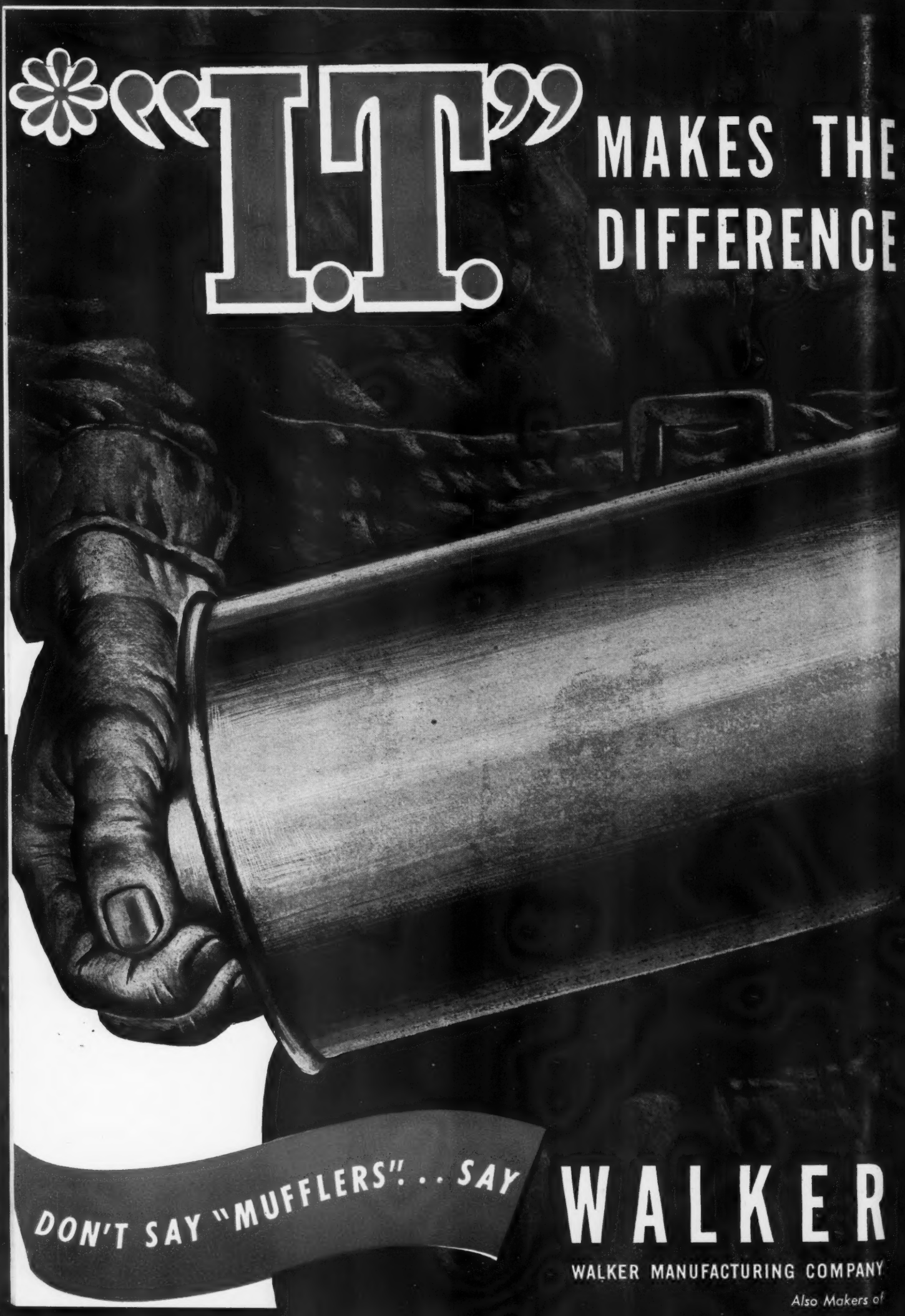
BEST SELLER

It's the book of the year for service men! From his Grey-Rock Catalog, your jobber's salesman can supply you with complete, up-to-the-minute information on every product in the *nationally advertised* Grey-Rock line of Brake Linings—Clutch Facings—and Automotive Rubber Goods . . . a line that's ready to set *new* sales records in this New Year of 1947.

UNITED STATES ASBESTOS DIVISION
of Raybestos-Manhattan Inc., Manheim, Pa.

Grey-Rock

BALANCED BRAKE LININGS


"IT" MAKES THE DIFFERENCE
DON'T SAY "MUFFLERS"... SAY
WALKER
WALKER MANUFACTURING COMPANY
Also Makers of

YES! INDIVIDUAL TUNING *DOES* MAKE THE DIFFERENCE!

THE superior performance of Walker Silencers is the result of a revolutionary and exclusive standard of engineering and design known as "Individual Tuning." This great, progressive engineering achievement cannot be duplicated as its basic features, the "Louvered Tube" and the "Louvered Tube Embossments" are fully protected by U. S. Patents. Through these basic features Walker engineering adds such further controls as are specifically required by each individual engine to assure peak efficiency, quietness and safety.

Every Walker "Individually Tuned" Silencer is equal or superior to the muffler originally installed on the vehicle in all phases of sound control . . . back pressure . . . fit . . . and durability.

It is this extreme accuracy of *individual* design and performance that has made Walker "Individually Tuned" Silencers the world's largest selling replacement mufflers and has earned for them the complete confidence of franchised car dealers and independent service men alike. No other muffler gives finer sound control within the permitted limits of back pressure. No other muffler is more minutely accurate in physical dimensions and internal construction. No other muffler more completely meets the requirements of modern engines.

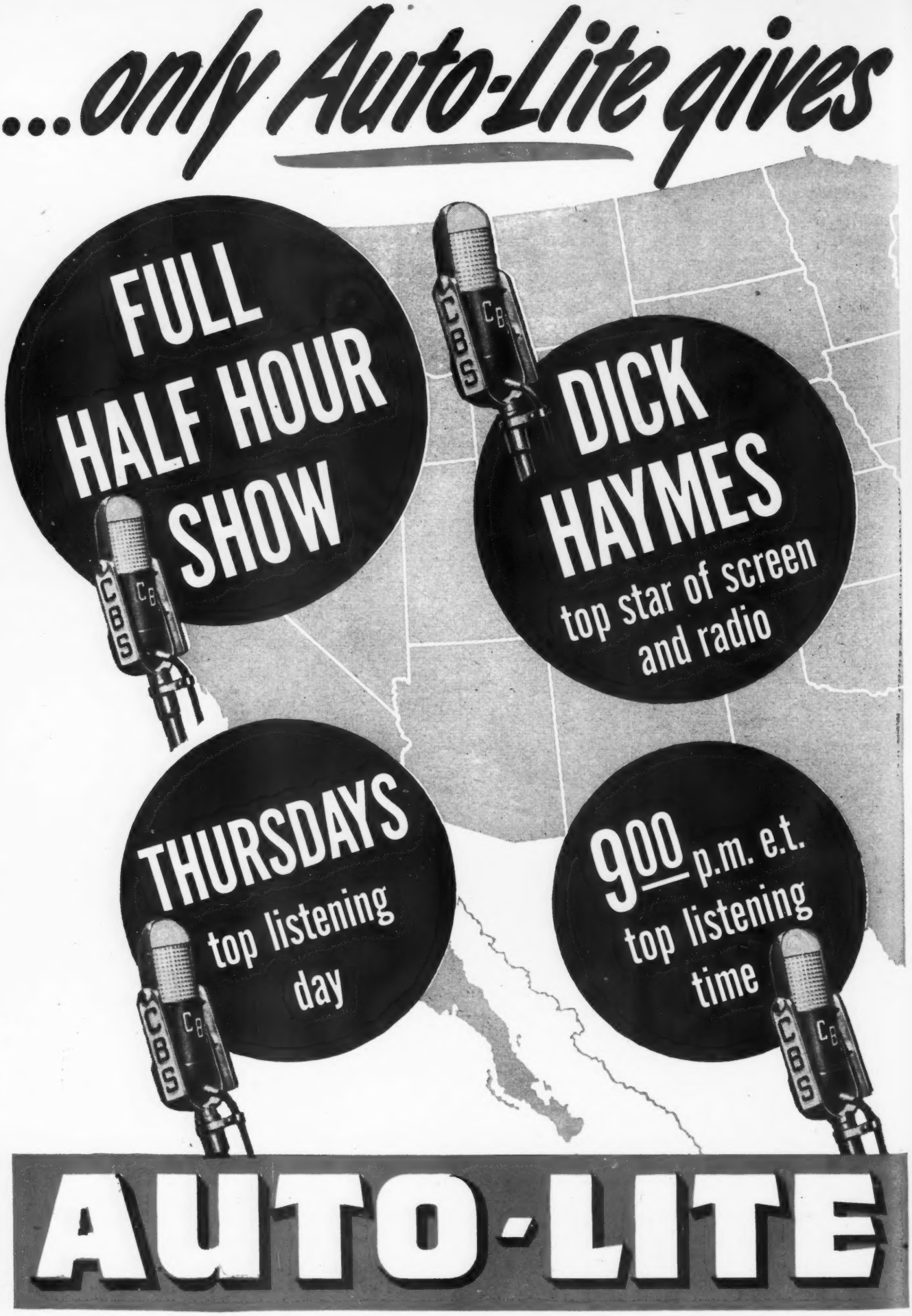
I.T. does make the difference!

R SILENCERS

OF WISCONSIN, RACINE, WISCONSIN

Walker Jacks and Electric Lifts

***INDIVIDUALLY TUNED TO EACH MAKE AND MODEL OF CAR**


...only Auto-Lite gives
FULL HALF HOUR SHOW
DICK HAYMES
top star of screen and radio
THURSDAYS
top listening day
9 00 p.m. e.t.
top listening time
AUTO-LITE

you RADIO like this
CBS
complete network
151 stations
directed to
26,000,000
radio homes
Switch to AUTO-LITE
In 1947, Auto-Lite starts its fourth consecutive year of full half hour national network radio. Only Auto-Lite gives you an outstanding star like Dick Haymes, a network of 151 CBS stations reaching 26,000,000 homes, a top listening hour on a top audience day.
Pacing this exclusive radio support is the greatest campaign in Auto-Lite history: magazines, farm papers, highway signs, proved point-of-sale promotions and merchandising displays . . . a complete program pointed at one objective, building traffic, volume and profits for dealers. Ask your jobber or write
Toronto, Ontario THE ELECTRIC AUTO-LITE COMPANY Toledo 1, Ohio
SPARK PLUGS
IGNITION ENGINEERED
Money cannot buy
a better spark plug
AUTO-LITE

Grote

Reflectors Lamps Flares

Thousands who saw Grote Products at the Show were amazed

Amazed at the fine designs! Amazed at the workmanship! Amazed at the finishes! Amazed at the sturdy construction! Amazed at the shatterproof Plexiglas Reflex lenses which have been built into Grote Reflectors, Flares, Tail Lights, Clearance and Marker Lights.

Jobbers who know merchandise — who are able to recognize products built to sell and stay sold are now handling the Grote line.

On your next order specify Grote Products with complete confidence.

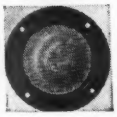
GROTE REFLECTORS are not glass!

Made of shatterproof Plexiglas, the clearest and hardest plastic material known. Reflectivity surpasses by far all State, I.C.C. and S.A.E. photometric requirements.

Heavy steel housing. Attractive aluminum enamel. Red or Amber Plexiglas lens. 3 models — #0-100 oval 3" dia. lens; #R-100 3" dia. lens, round, 2 hole; #104 4" dia. lens, round, 4 hole.

O-100

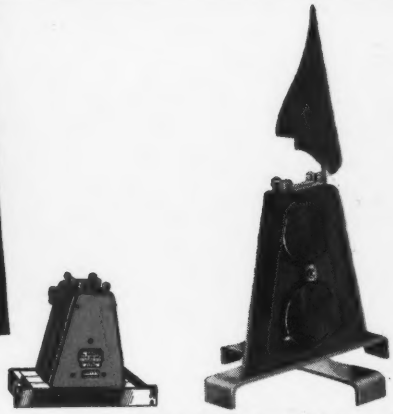
R-100



GROTE MANUFACTURING CO., Inc.

BELLEVUE, KENTUCKY

Automotive Sales Office — Moorestown, N. J.



I.C.C. approved. NO FUEL OR BULB FAILURE — NO BATTERY FAILURE — NO CROWNED ROAD WOBBLE — STANDS ON LEGS — VISIBLE ½ mile in both directions — Sealed in Plexiglas shatterproof reflectors — ELIMINATES MAINTENANCE

Universal Type Stop and Tail Light — #215-U — Powerful GROTELITE Reflex lens. Adapter bracket for Universal installation. Illuminating License lens clear molded plastic. Black enamel finish.

Stop and Tail Light — #215 — Perfect replacement for 2" bolt center spacing. Ideal for original equipment. GROTELITE Reflex LENS.

Streamline Marker or Fender Lights — #205 — Rubber mounting pad for Universal fit on flat, medium or deep curved surfaces. Red, Amber or Clear one piece Plexiglas lens.

Armored Clearance Lights — #200 — Extra heavy ⅛" steel housing, special aluminum finish, and shatterproof Plexiglas lens. Visibility far exceeds requirements.

Combination Stop and Tail Light and License Bracket — #215-L — Heavy steel license plate holder spot welded to #215 housing. Installation adjustable to varying bolt centers.

Grote Sealed Beam Fog Lights — A 1947 design. The last word in appearance, construction and workmanship. Heavy Chromium finish. Sturdy Mounting brackets. No. 4015 Mazda Sealed Beam units.

Quick Starts ...Long Life

WILLARD BATTERIES — Automobile Truck and Bus • Radio • Motorcycle Tractor • Aircraft • Marine • Diesel Stationary — Sold and serviced by Willard Dealers everywhere.

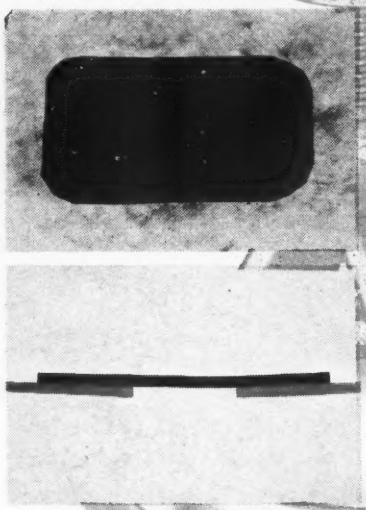
Willard "SAFETY-FILL" BATTERIES

Dependability • Performance • Long Life

WILLARD STORAGE BATTERY CO. • CLEVELAND • LOS ANGELES • DALLAS • TORONTO

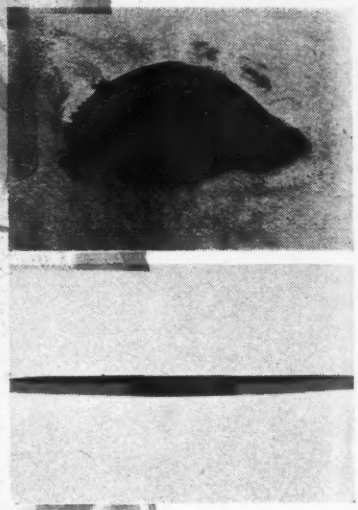
NO MORE PATCHES!

This? . . . . . or This?



The old method of tube repair was—PATCH. Patches tend to loosen under stress or strain. In cross-section, the patched area looks like this (lower left). With certain synthetic rubbers, the ragged ends underneath will split, crack, and work out under the patch. Soon you have another "flat".

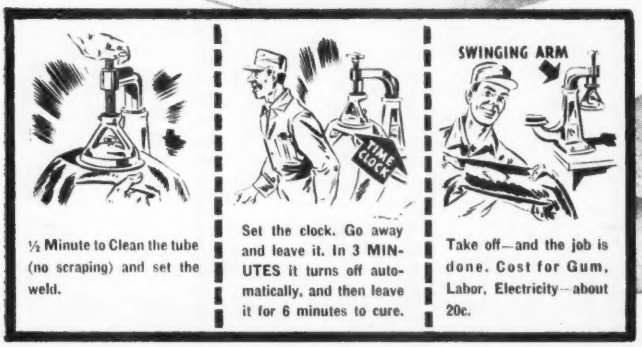
NO MORE PATCHES! Tireweld makes a repair of *live rubber*, cured at exactly the right temperature, for exactly the right length of time. Cross-section (lower right) shows how with a Tireweld repair the ragged ends are embedded with the weld. The repair is *a cohesive part of the original tube!*



Depends on This

ONLY $75 INCLUDING REPAIR MATERIALS

TIREWELD REGISTERED TRADE MARK



½ Minute to Clean the tube (no scraping) and set the weld.

Set the clock. Go away and leave it. In 3 MINUTES it turns off automatically, and then leave it for 6 minutes to cure.

Take off—and the job is done. Cost for Gum, Labor, Electricity—about 20c.

YOU'LL BE AMAZED to see how easily Tireweld makes an actual weld of live rubber. Just set the clock on the "Marktime" switch, and heat is automatically turned off at the right time to assure a perfect cure. Meanwhile the operator is free to attend to other duties—there is no time-consuming watching and waiting.

YOU'LL BE AMAZED at the jobs Tireweld will do for you—repairs cuts and holes in casings; fixes "impossible-to-repair" tubes; has no trouble with repairs around valve-stem. Tireweld is equally effective on natural or synthetic rubber.

YOU'LL BE AMAZED at the way Tireweld makes profits for you. Repair material is inexpensive. The machine costs only $75.00, including kit with materials for $35.00 worth of repairs.

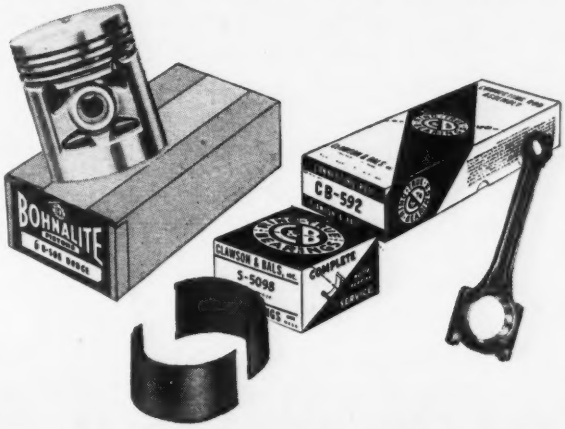
Put up a sign "NO MORE PATCHES"—and start giving BETTER REPAIRS at BIGGER PROFITS! Write Tireweld for particulars TODAY.

ALLIED AUTOMOTIVE CORP.

1729 FORD BUILDING • DETROIT 26, MICHIGAN

IN AUTOMOTIVE PRODUCTS, TOO, "RING-TRUE" MEANS THE FINEST

Get to know *all* these automotive products bearing the "Ring-True" emblem of Clawson & Bals: Engine Bearings... Reconditioned and Rebabbitted Connecting Rods... *Bohnalite* Pistons and Pins... Hydraulic Brake Parts... Hydraulic Brake Hose... Whip Ends... Water Pumps... Water Pump Repair Kits... Spring Shackles... and Flexible Hose Assemblies for gas, oil, grease and vacuum lines. If it's "Ring-True," it's the *finest!* Clawson & Bals, Inc., 2508 S. Michigan Ave., Chicago 16.



Genuine RING-TRUE PRODUCTS

CLAWSON & BALS, INC.

Really Complete Engine Bearing and Connecting Rod Service... Branches in Principal Cities

*Get both with Armstrong-Victor Cork Gaskets

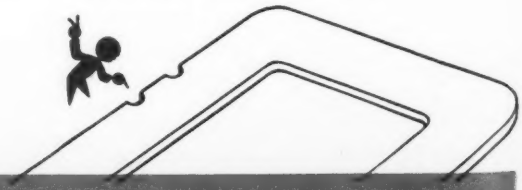
You can count on fast, easy installation when you use Armstrong-Victor Cork Gaskets. They always fit the parts they are made for. Bolt holes always line up. That's because these gaskets are made with an exclusive anti-shrink, anti-stretch binder developed by Armstrong engineers.

Armstrong-Victor Cork Gaskets also give you an oil-tight seal on every job. Their live, resilient cork composition fills in rough or pitted surfaces, gives you tight, leakproof joints.

Supplied in handy, clearly labeled packages, Armstrong-Victor Cork Gaskets are available for all popular makes of cars, trucks, buses, and tractors. For a complete listing, ask for the new Victor Gasket Guide No. 14. Write today to your jobber or Victor Mfg. and Gasket Co., 5750 Roosevelt Road, Chicago 90, Ill.

LOOK FOR THE TWO NOTCHES

An Exclusive Armstrong-Victor Replacement Gasket Trade-Mark



Armstrong-Victor

ARMSTRONG VICTOR

CORK GASKETS • CORKOLIN • CORK SHEETS

IT'S RUMORED THAT

the 1950 Packard will be powered with four Packard Marine Engines (capable of 7400 horsepower), retractable fenders and Radar-equipped steering!

When questioned, Packard officials stated that the marine engines were champions of the waterways, but the passenger car power plant will be improved in the light of highway transportation. Packard officials stated further that if they only could contact Buck Rogers, they would ask his opinion of the fenders and steering.

IT'S RUMORED THAT

women drivers will be outlawed soon!

"I certainly hope not!" says Don McNeill of ABC Breakfast Club fame. "Women are good drivers. In fact, they're excellent drivers. *In fact,* they're far better than men!" When we asked him who listened to his program, Mr. McNeill said slyly, "among others—Women."

IT'S RUMORED THAT

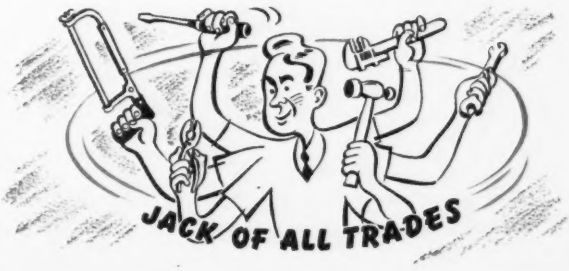
Greyhound plans Scottie shuttle lines!

We asked J. L. Williams, general traffic manager of Greyhound Lines, about that. "Helicopter air-buses—maybe. Scotties—no," was his reply. "And you have probably started something that will dog us for years!"

IT'S RUMORED THAT

one type of piston ring stops oil pumping in all engines!

"Obviously silly," says Theron Bradshaw, P. C. Chief Replacement Engineer. "Every make and model of car, condition of engine and type of service is different and should be treated differently. That's why P. C. has more than 3,000 Custom Made sets of piston rings. The right combination gives the best results every time."



The Perfect Circle Company, makers of Perfect Circle *Custom Made* Piston Ring Sets, will pay fifty dollars for each rumor, fact or fiction, accepted for this page. Send your rumor to Rumor Page, Perfect Circle, Hagerstown, Indiana. All contributions become our property and cannot be returned.

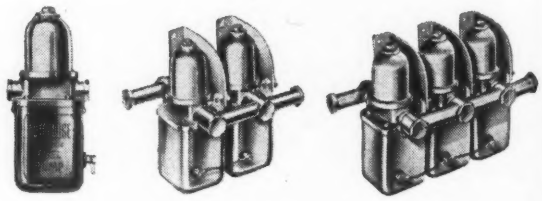
Mr. Service Station Operator,

have you kept track of your fuel pump jobs?

According to the Service Job Analysis for 1945, there were only 7 mechanical elements that more frequently needed maintenance than the fuel pump—38 other elements required less maintenance.

With so many jobs involving the fuel pump, wouldn't it be worth your while to give some thought to this item and perhaps capitalize on it to a greater extent?

Consider for a moment the Autopulse Electric Fuel Pump. Here is what you can do with it and what it will do for you. You can put it on any automobile, truck or tractor, any make, any size. It's easy and quick to install. You can mount it conveniently in the fuel line on either side of the vehicle. When you standardize on the Autopulse, you can get along on a very small inventory. Because of its superior performance, it builds customer goodwill for you wherever you install it. The most beautiful part of it is, it's profitable—profitable to you.



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for complete parts and technical service

NAPA Assurance of Quality

Your NAPA Jobber is a Good Man to Know!

The Monmouth Clutch Parts Line is complete for all cars, trucks, buses and most off-the-road vehicles. Example—a typical automotive assembly as required by popular make cars is illustrated. Each part, or group of parts, packaged for your convenience in ordering and handling. Quality of each part is unexcelled because of Monmouth's superior manufacturing standards. Technical service is also complete, consisting of the Clutch Specialist—the Service Manual and the complete series of Bulletins covering correction of clutch troubles and rebuilding of clutches.

For all clutch problems, think first of Monmouth. Branch Reconditioning Plants—New York, N. Y., Dunn, N. C., Memphis, Tenn.

MONMOUTH PRODUCTS COMPANY • CLEVELAND, OHIO

FOR ENGINE BEARINGS
CLUTCH PLATES AND PARTS
CHASSIS PARTS

Monmouth Trade Mark *is the name*

Show this sign NOW!

It means EXTRA SAFETY for motorists... EXTRA PROFITS for you!

● Millions of drivers want tire chains now: They want new chains—or repairs for their old ones. Lots of them want their chains put on or taken off. And all this means money in your pocket.

Tell the world you give genuine WEED CHAIN service. Put up your WEED CHAIN signs now—and cash in on the WEED Three-Way Profit Plan:

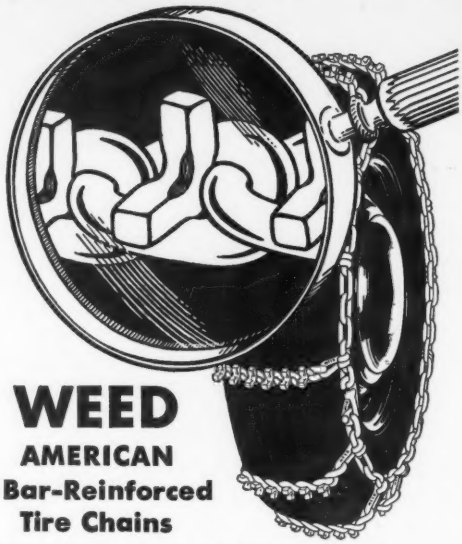
1. **Repair chains.** WEED chain repair tools make an easier, faster, more profitable job of it.
2. **Service chains.** Putting chains on is a standard service, like changing tires. Many dealers charge for it accordingly.
3. **Sell WEED CHAINS.** Supplies are limited, but you make money on every pair you sell.

Show your WEED signs now, and get *all three* tire chain profits.

These Weed Chain Repair Items Give You Faster, Better Work

★ **Weed Sturdy Pliers**—for passenger car chains
★ **Weed 711 Pliers**—for passenger car, truck and bus chains
★ **Weed Chain Repair Tools**
★ **Weed Cross Chains**

If you need signs, tell your WEED CHAIN jobber salesman.



WEED
AMERICAN
V Bar-Reinforced Tire Chains

THE NEW IDEA IN TRACTION

● Note the V-shaped cross bars. They provide at least 288 gripping traction points on every pair. The reinforcing bars are set at opposite angles to resist sidesway. That's why these chains help stop cars straighter and quicker—dig out of drifts easier. That's why motorists will prefer WEED AMERICAN V-Bars.

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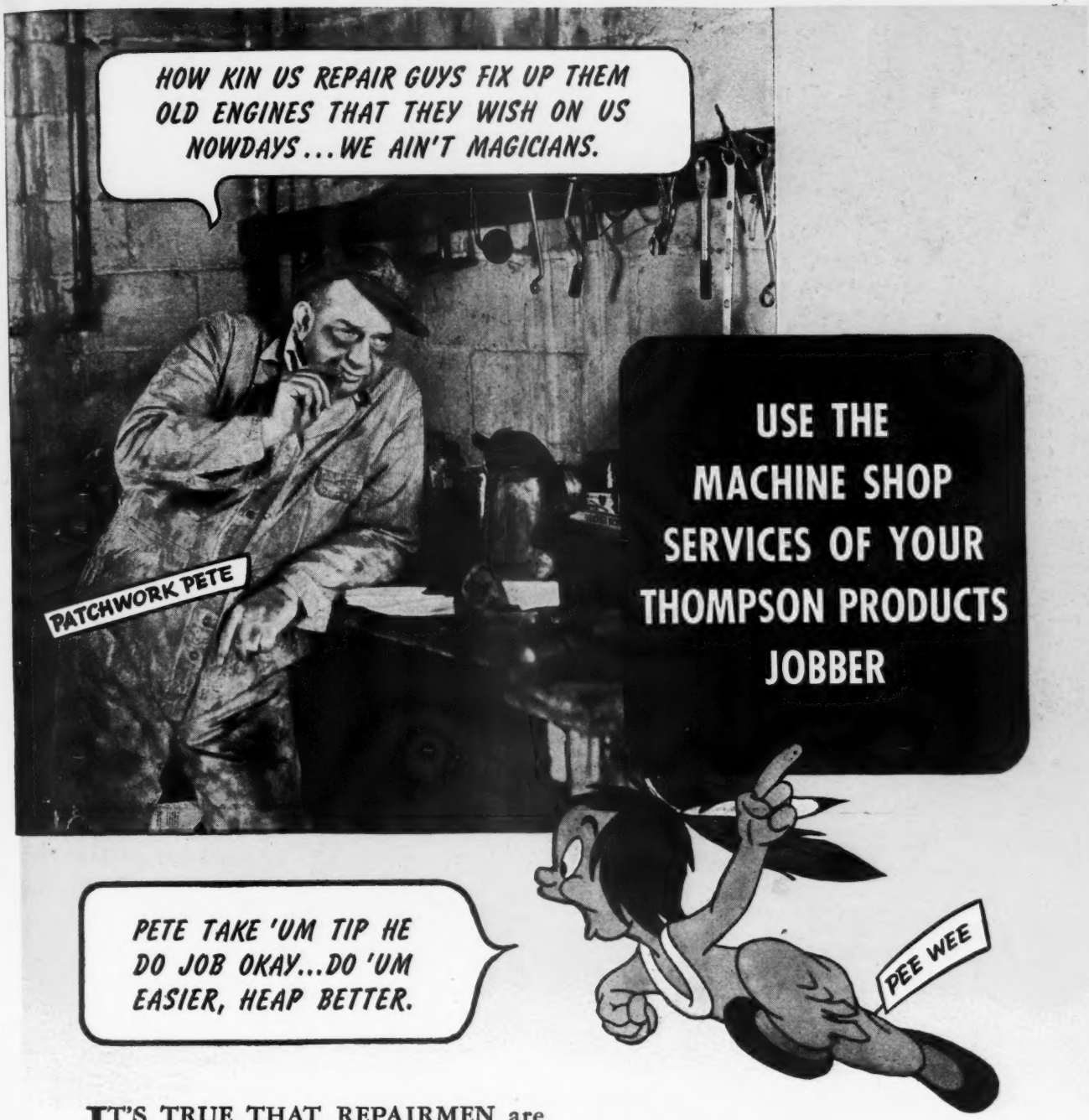
AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

In Business for Your Safety



IT'S TRUE THAT REPAIRMEN are called upon to keep more old cars, trucks and buses in service than ever before. Yet with Thompson engine and chassis parts, many of these mechanics are performing miracles in salvaging vehicles that normally would be towed to the junk yards.

And with the modern machine shop service offered by TP Jobbers, mechanics and shops with limited facilities can confidently take on the major jobs and complete rebuilding jobs that are necessary to keep old models on the road, delivering many more miles of *safe,* economical transportation.

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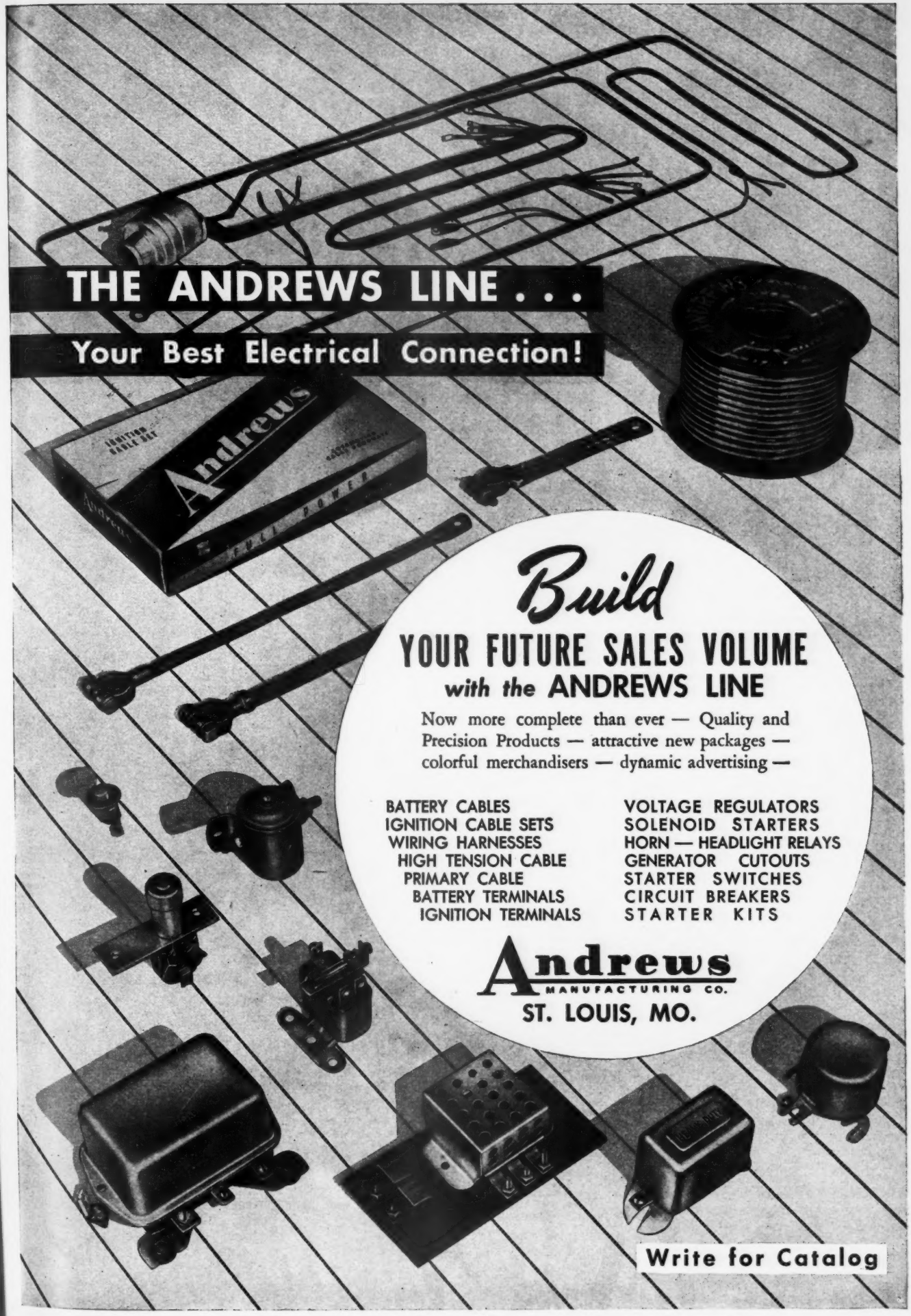
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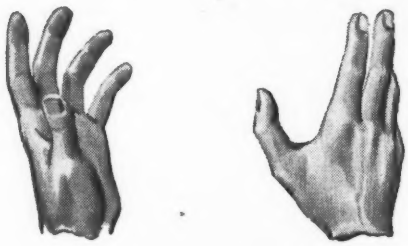
I get my share of bouncing

It comes from every side



So in my car please give me That gliding DELCO RIDE

No matter how old the customer *or* his car, you can make him happy by giving him that smooth, restful "Delco Ride"—a feature of outstanding new cars in every price class.

Delco Shock Absorber Service makes it easy and profitable to restore new-car comfort to old models. With original-equipment parts and fluid, complete cylinder replacements and the Delco Shock Absorber Exchange Plan, you're prepared to provide exactly the right service in every case.

Check the shocks as a routine part of every grease or repair job. It will pay off in increased comfort for your customers—more profits for you. Delco Products Division, General Motors Corporation, Dayton, Ohio.

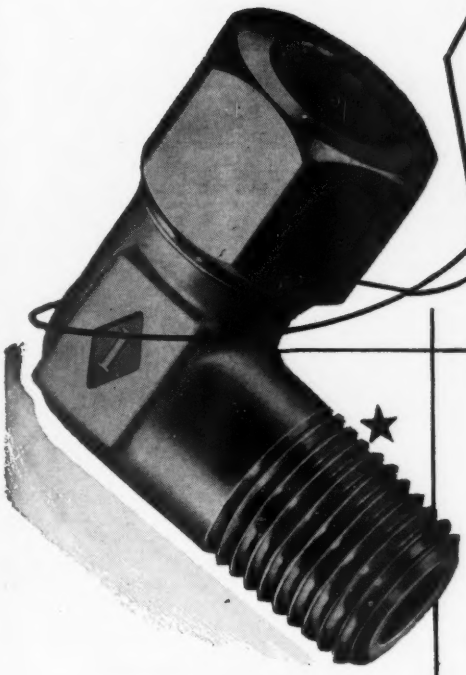
UNITED SERVICE MOTORS

Delco Shock Absorbers—A United Motors Line

Delco original-equipment service parts are sold through independent distributors served by 20 United Motors Service warehouses.

DELCO Hydraulic Shock Absorbers

Now . . . Finer because they're ☆ Forged



IMPERIAL TUBE FITTINGS
for gas, oil and brake line work.

FORGED FITTINGS ARE STRONGER

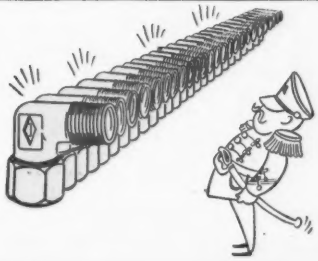
Brass forgings are over 80% stronger than brass castings — that's why forged fittings will withstand higher pressures.

FORGED FITTINGS ARE TOUGHER

Forged fittings stand up better under hard knocks, mechanical shock, and vibration because forging concentrates fiber-like flow line structure of metal at points of stress.

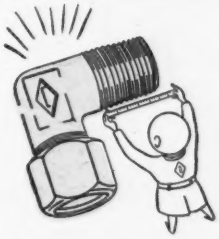
FORGED FITTINGS ARE DENSER

The extremely close-grained structure of forgings assures against blow holes or other concealed defects and against seepage of even hard-to-hold materials.



FORGED FITTINGS ARE MORE UNIFORM

Dimensions of forgings are held within extremely close limits — far closer limits than are possible in the case of castings. This makes fittings easier to install.



DRYSEAL PIPE THREADS

Full length SAE Dryseal Pipe Threads are being incorporated on pipe thread ends. These threads make tight joints without pipe dope; are longer on sizes ¼" and over.

★ Dryseal Pipe Threads make tight joints without pipe dope. Note longer length.

☆ Elbow and tee bodies on Compression, Flared, Hi-Duty, Flex and Inverted Flared Tube Fittings are being converted to forgings. Straight fittings made from brass rod.

IMPERIAL announces new, finer tube fittings for gas, oil and brake line work. These new fittings have forged bodies on elbows and tees and SAE Dryseal Pipe Threads on pipe connections.

All the advantages above combine to bring you something far better in tube fittings. Now, more than ever before the Imperial Diamond "I" on fittings is your assurance of top quality.

THE IMPERIAL BRASS MFG. CO., 1217 W. Harrison St., Chicago 7, Illinois

Write for Bulletin No. 349 on Forged Fittings

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BRASS FITTINGS • FLEXIBLE FUEL LINES • TUBE WORKING TOOLS • BATTERY HYDROMETERS • BARREL FAUCETS • WELDING EQUIPMENT

COLD CUSTOMERS *mean* EX-CUSTOMERS

keep 'em warm with KESTER CORED SOLDERS

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● Kester Rosin-Core Solder, for electrical work, and Kester Acid Core Solder, for general use, are both the outstanding choices of top-flight mechanics and garage men everywhere.

● So build customer-confidence while you cut shop time to a minimum. Standardize on Kester Cored Solders. Order from your jobber today.

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4242 Wrightwood Ave., Chicago 39, Ill.
Eastern Plant: Newark, N. J.
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MOTOR AGE

With Which Is Combined AUTOMOBILE TRADE JOURNAL

FOR AUTOMOTIVE SERVICEMEN

VOL. LXVI, No. 2 — January, 1947

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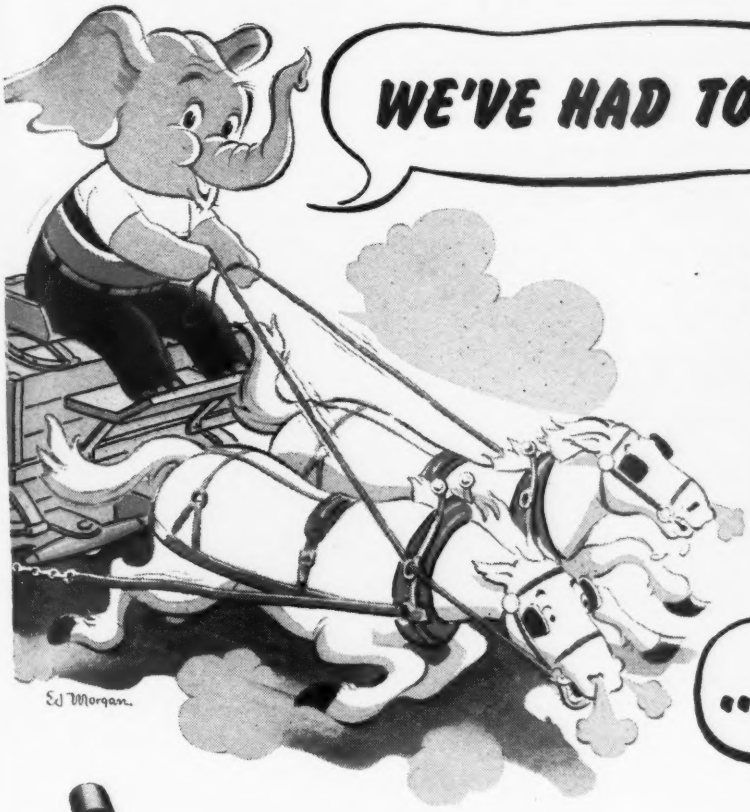
1877 70 Years of Progress 1947



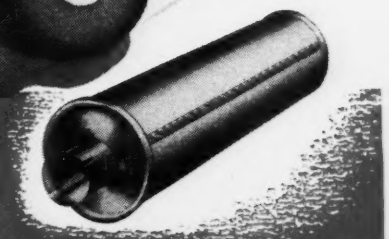
● The name MAREMONT made its first appearance in the transportation industry *seventy years ago.* Standing rigidly by its policies of *Careful Selection of Materials, Expert Workmanship,* and *Progressive Planning,* MAREMONT has forged steadily ahead until it has reached a position of distinction and high esteem.

Prompt, courteous service, faultless honesty, and uniformly high quality of products have made the name MAREMONT a byword of success in the automotive world.

As MAREMONT has progressed, so have the many dealers and distributors who have worked with the MAREMONT line. Current demands for MAREMONT Products come from every corner of the nation.

Yes, we've had to be good to reach seventy! And MAREMONT will always continue to push forward, striving constantly toward a higher and higher degree of excellence in its automotive lines.

New MAREMONT catalogs are now ready for distribution. Write today for another catalog [illegible] and spring catalog [illegible].



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NOT 2...

NOT 6...

but **26**

basic designs

OF SEALED POWER PISTON RINGS

Power that *blows by* piston rings is wasted power, so blow-by control is one of the four vital requirements for BALANCED PERFORMANCE. The others are oil control, low friction, and minimum wear. You get ALL FOUR when you use Sealed Power Individually Engineered Ring Sets, made up from twenty-six (26) basic designs of piston rings. Whatever the make, model, or cylinder wear condition, there is a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets for seven years, has been producing rings for car, truck, and engine builders 35 years. For best results, re-power with Sealed Power motor parts. Sold by leading distributors. Sealed Power Corporation, Muskegon, Michigan and Stratford, Ontario.

Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps, Bolts, Bushings, Tie Rods, Front End Parts

INDIVIDUALLY ENGINEERED

SEALED POWER PISTON RINGS

BEST IN NEW CARS! ★ BEST IN OLD CARS!

Keep your War Bonds! Get $4 for $3!

MOTOR AGE

JANUARY, 1947

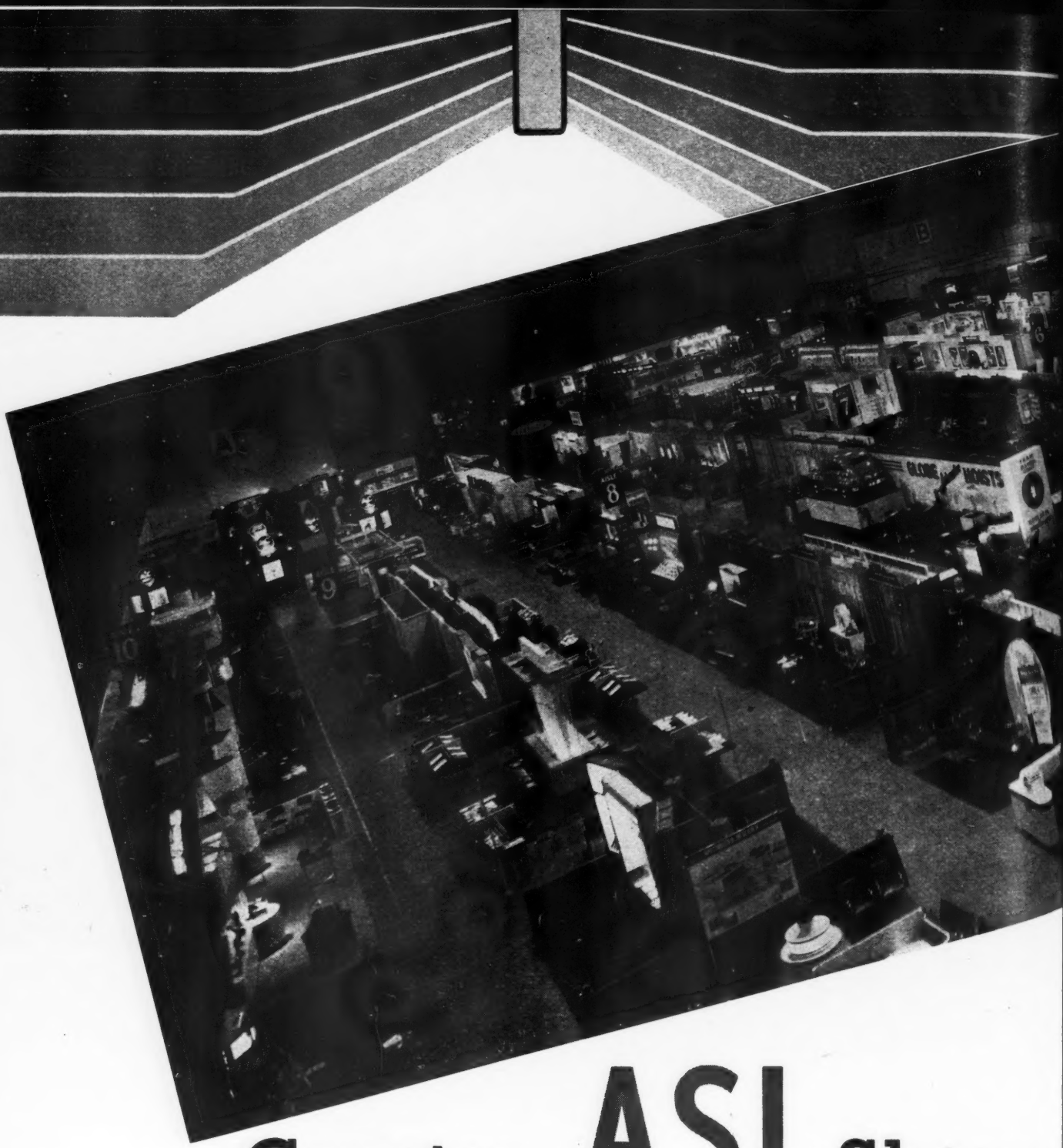
THE independent repair shop operators and car dealers entering the post-war period are facing the most crucial era in their careers.

In the car dealer field new makes are appearing. In the maintenance field the larger oil companies are coaching their dealers to expand their facilities to include maintenance. In both fields, the number of establishments is increasing as returning soldiers and other business men are attracted by the volume of maintenance enjoyed during the war and by the new car market.

These competitive factors, coupled with the uncertainties of new car production and the general business situation, make accurate data of extreme importance in aiding evaluation of the situation.

Realizing the difficulties besetting the 65,000 subscribers to MOTOR AGE, the editors have designed this special issue to fill that need—to be a road map and guide for the coming automotive markets. To this end statistics and data of the automotive field are supplied and presented in an easy-to-use manner.

To meet the new competition, the latest in shop equipment, parts, tools, and accessories, most of them displayed for the first time at the Automotive Service Industries Show in Atlantic City in December, are described. Special assistance is provided to help readers design new buildings. Of particular importance are the carefully selected check lists of equipment and tools which the shop operator and service manager can use as standards. Every reader will want to keep this issue as a guide to help meet the shifts in the business period during the coming era.



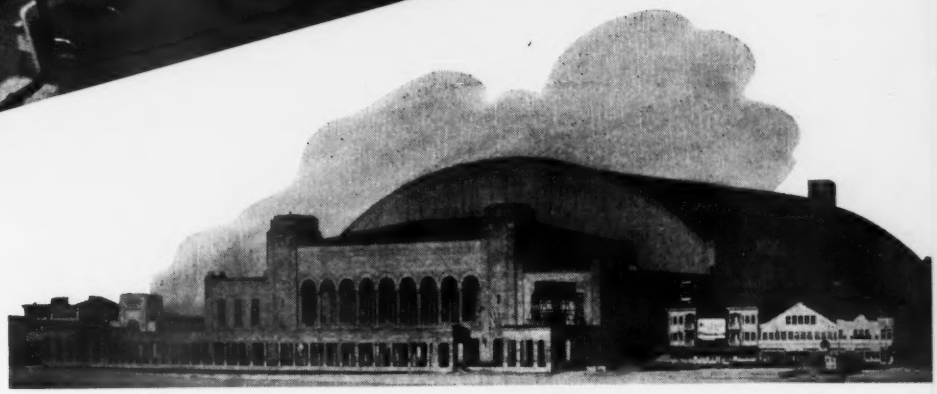
Greater ASI Show

This largest Automotive Service Industries Show ever held presented to nearly 15,000 people $2,000,000 worth of exhibits by 431 manufacturers

PICTURES and words can never serve completely to bring to the readers of MOTOR AGE a conception of the tremendous size, the productive capacity, the inventive genius, the marketing intelligence and the sheer manpower which enter into a presentation like the Automotive Service Industries Show held in Atlantic City last month.

Only direct personal participation in the show can do that.

However, we can present a number of the more im-



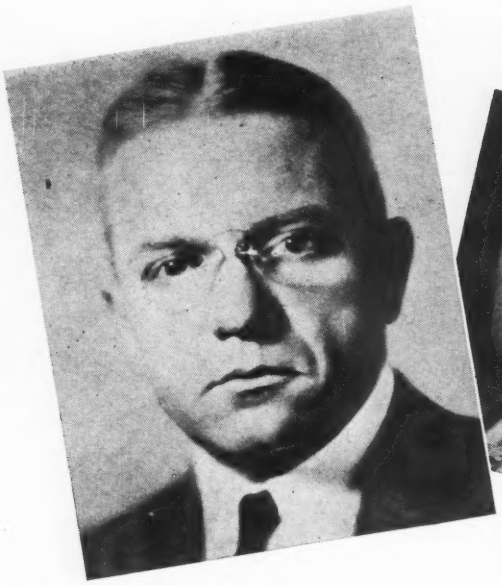
The exhibits filled both floors of the huge Atlantic City Convention Hall.

Draws Thousands

By AL LAANSMA

portant ideas or facts that came out of the show and out of the attendant annual conventions of the three big national associations which jointly sponsored it. These associations are: Motor and Equipment Manufacturers Association, Motor and Equipment Wholesalers Association and National Standard Parts Association.

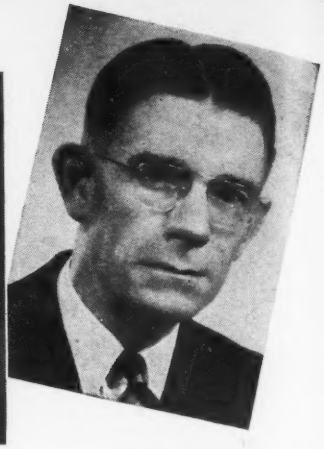
First of all—automotive maintenance and service is Big Business and the Automotive Service Industries Show represents the biggest part of that big business. Even though the privilege of exhibiting at the show is restricted entirely to manufacturers who distribute their products to the retail service trade through automotive jobbers and who are members of one of the sponsoring associations—and even though attendance at the window is restricted for three days to jobbers who are members of one of the associations and the balance of the week to invited jobber guests—the show still is thronged by unbelievably large crowds—this one



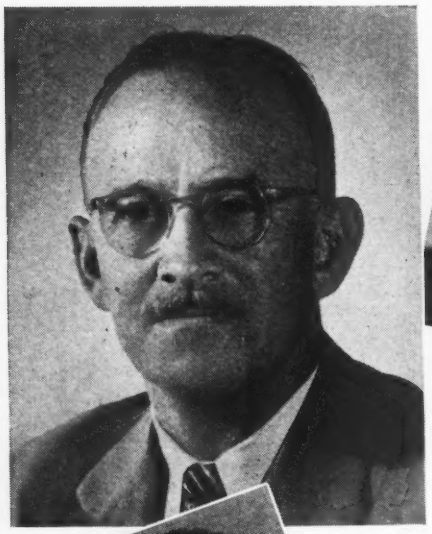
Frederick G. Wacker, Automotive Maintenance Mchy. Co., President of Motor Equipment Manufacturers Assoc.

Bert G. Cochrane, Casco Products, MEMA Vice-President.

Clyde P. Brewster, K-D Mfg. Co., MEMA Treasurer.

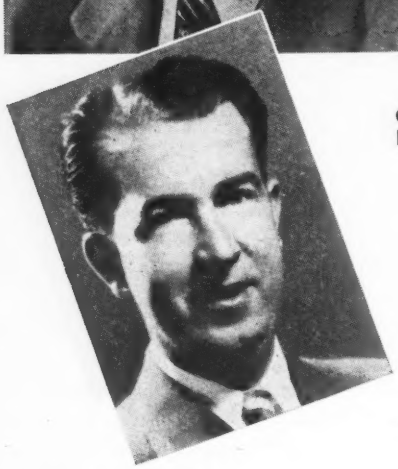


Alfred E. Keough, John T. Stanley Co., MEMA Secretary.



E. M. Sheehan, Motor Parts Co., Senior Vice-President of NSPA.

Charles S. Rogers, P&D Mfg. Co., President of National Standard Parts Assoc.



Charles Crowder, Van Norman Co., Junior Vice-President of NSPA.

brought over 15,000 people to Atlantic City for periods ranging from two weeks to three days.

Parenthetically, while mentioning size, we ought to point out that 431 manufacturers of parts, accessories, equipment, tools and maintenance materials occupied 1164 booths requiring 129,000 sq. ft. of floor space—both complete floors in the huge Atlantic City auditorium.

Attendance at the show was impaired to some extent by transportation problems precipitated by the coal strike—although cancellation of the strike on Saturday preceding the show opening was a tremendous morale booster and a significant contribution to the enthusiasm and business confidence which permeated the show.

Second—automotive maintenance and service will continue to be Big Business during 1947. Just how big cannot be estimated—the size of the market is limited to some extent by the availability of critical materials, the willingness and ability of labor to produce and also by the prices that the car and truck owning public is going to have to pay for repairs and service. In spite of these limiting factors, and they are important, automotive transportation has proved to be such a vital part of the national economy that handling even the minimum needs of today's vehicles will provide healthy business to all aggressive service shops.

Third—because automotive maintenance and service is Big Business, it will become more highly competitive and that compe-

(*Continued on page* 86)

NEWS BULLETIN

★ Spare tires are now being added to new cars by the factories.

★ Ford has announced an increase in delivery charges ranging from $1.78 to $23.79 as a result of the higher freight rates.

★ Most car factories are continuing their 1946 models through 1947 with only minor appearance alterations to distinguish the changeover.

★ Car and truck production for 1946 passes 3 million mark.

★ UAW-CIO completing plans to obtain millions from car factories in retroactive suits for portal to portal pay.

★ Buick to begin production of 1947 models early in January.

★ Ford continues in first place in the new car registration race with Chevrolet and Plymouth in second and third place, respectively.

★ L. W. Ward succeeds D. U. Bathrick as general sales manager of Pontiac. Bathrick resigned.

★ With assurance of uninterrupted production, prices of "used" 1946 models are easing considerably.

★ Parts prices expected to be jacked up.

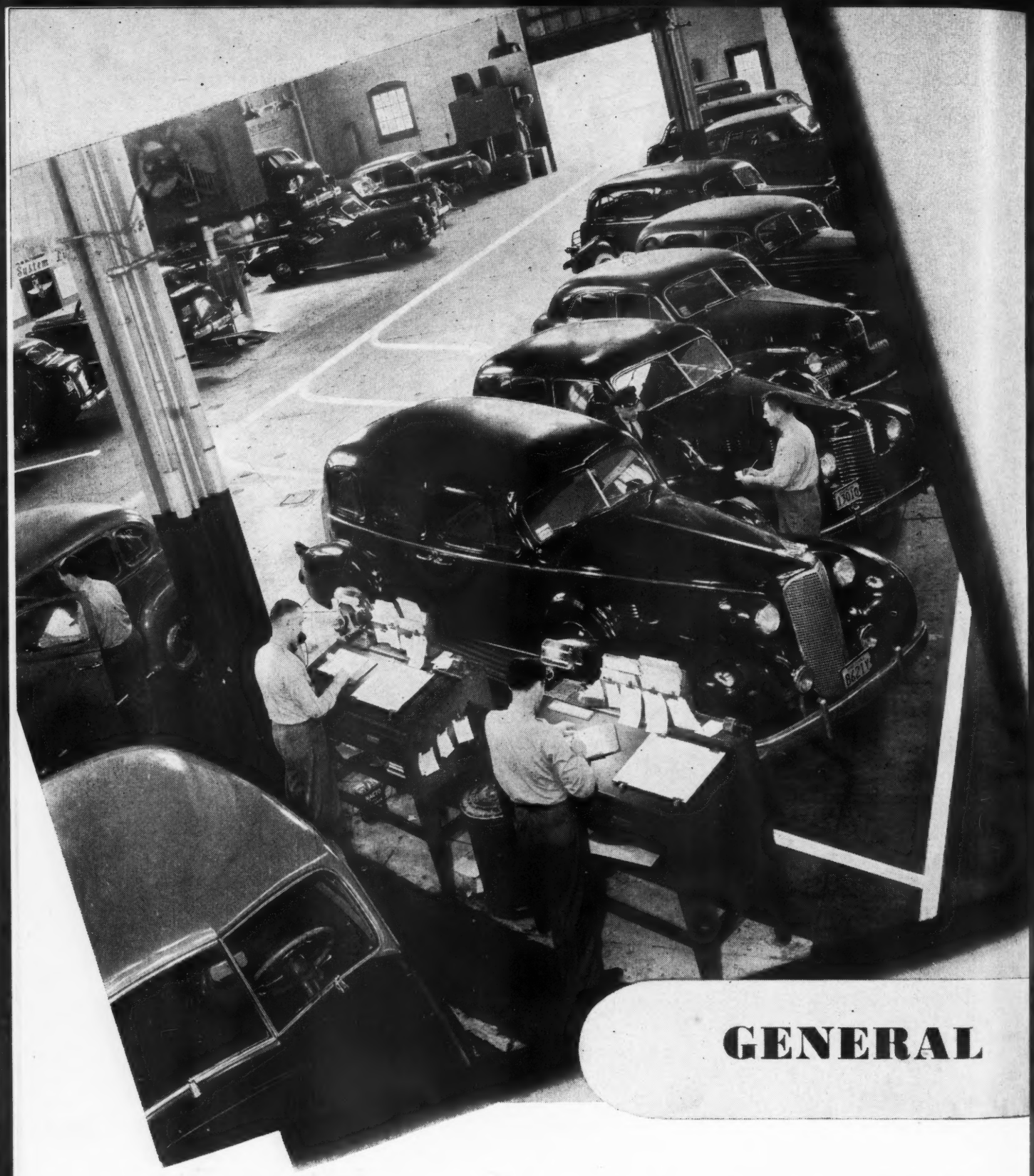
★ Firestone sales set new peace time record.

★ First 1947 Cadillac models are now coming off the line.

★ Tucker expects to be in production by April. Company is now assured of use of entire "Dodge - Chicago" plant.

★ Black and Decker reports a backlog of orders totaling $20 million.

★ Willys has set production goals of 101,803 units for 1947 and 300,000 for 1948.



GENERAL

HOW well I am equipped to meet competition is a problem every shop manager is considering. All authorities agree that the automotive maintenance business is now emerging from the seller's market it enjoyed throughout the war to enter a highly competitive buyer's market. Competition is being intensified not only by an increasing number of shops but also by better equipped shops.

Consequently service management especially realizes the importance of adequate equipment, because they know that the well equipped shop gets the business.

More customers are attracted by modern shop equipment not only because of its appearance but also because it assures customers of quality work. Equally important to the intelligent manager is the fact that a fully equipped shop can turn out more work in less time with a consequent increase in profits, resulting from greater volume and from reduced overhead.

It is, therefore, important to know just how well your shop is

This and the following pages will show you where the weak points of your repair shop lie

CHECK YOUR EQUIPMENT ON THIS LIST

- ☐ Reamers
- ☐ Strap wrenches
- ☐ Torque wrenches
- ☐ Arbor press
- ☐ Power wrenches
- ☐ Engine lathe and accessories
- ☐ Clutch rebuilder
- ☐ Transmission dolly
- ☐ Gear puller
- ☐ Bearing puller
- ☐ Wheel puller
- ☐ Spring shackle tools
- ☐ Spring spreading tools
- ☐ Axle puller
- ☐ Bushing puller
- ☐ Tow bar
- ☐ Sledge
- ☐ Floor cleaning equipment
- ☐ Ladders
- ☐ Racks
- ☐ Work benches
- ☐ Dynamometers
- ☐ Vise
- ☐ Chain hoist
- ☐ Anvil
- ☐ Drop lights
- ☐ Lift
- ☐ Garage jacks
- ☐ Stationary jacks
- ☐ Piston grooving tool
- ☐ Bearing scrapers . .
- ☐ Piston skirt expander
- ☐ Piston pin lock ring grooving tool

SHOP

equipped. On these and the following eight pages, MOTOR AGE has consequently compiled lists of tools and shop equipment for the shop operator and mechanic to use as a standard against which tools and equipment can be checked. Every effort has been made to make these departmentalized lists complete. Check your shop for greater profits.

- ☐ Hand jacks
- ☐ Heavy duty wrench sets
- ☐ Micrometers
- ☐ Calipers
- ☐ Bolt cutters
- ☐ Radiator filling can
- ☐ Fire extinguishers
- ☐ Air compressor
- ☐ Air dispenser
- ☐ Tubing bender
- ☐ Storage bins
- ☐ Boxes and bins, storage
- ☐ Wire brushes
- ☐ Brushes, washing
- ☐ Gas, oil, water cans
- ☐ Engine cleaner
- ☐ Bolt and rivet clipper
- ☐ Cutting and welding equipment
- ☐ Blow torch
- ☐ Cylinder reconditioning equipment
- ☐ Connecting rod aligner
- ☐ Time-recording clock
- ☐ Cash register
- ☐ Skid chain repair tools
- ☐ Crankpin reconditioner
- ☐ Parts cleaning equipment
- ☐ Radiator flusher
- ☐ Gasket cutter
- ☐ Glass cutter
- ☐ Display cases
- ☐ Creepers
- ☐ Fender covers
- ☐ Door covers
- ☐ Seat covers
- ☐ Repair card holders
- ☐ Waste cans
- ☐ C clamps
- ☐ Metal shears
- ☐ Chamois
- ☐ Taps and dies
- ☐ Towing and wreck handling equipment
- ☐ Emery wheel dresser
- ☐ Drill stand
- ☐ Drill press
- ☐ Hand drills
- ☐ Breast drill
- ☐ Ratchet drill
- ☐ Star drills
- ☐ Twist drills
- ☐ Electric drills, portable
- ☐ Bench grinder
- ☐ Drifts
- ☐ Brace and wood bits
- ☐ Bearing cup driver
- ☐ Bushing driver
- ☐ Reamer drive

- ☐ Anti-freeze hydrometer
- ☐ Engine stand
- ☐ Stud or bolt extractors
- ☐ Rivet setters
- ☐ Carbon scrapers
- ☐ Sleeve puller
- ☐ Head puller
- ☐ Tachometer
- ☐ Files and rasps
- ☐ File cleaner
- ☐ Axle repair stand
- ☐ Transmission repair stand
- ☐ Floor crane
- ☐ Headlight lens tools
- ☐ Speedometer tools
- ☐ Goggles, shields
- ☐ Bolt and screw extractor
- ☐ Pull scales
- ☐ Hack saws
- ☐ Soldering irons
- ☐ Solder spray guns
- ☐ Hose cutter
- ☐ Hammers
- ☐ Brushes, paint
- ☐ Pry bars
- ☐ Power car washer
- ☐ Sponges
- ☐ Vacuum cleaner
- ☐ Rubber boots
- ☐ Wringer, chamois
- ☐ Buckets
- ☐ Rubber aprons
- ☐ Thread chaser
- ☐ Spring tester
- ☐ Tire pressure gages
- ☐ Thread gage
- ☐ Bearing leak detector
- ☐ Valve seat inserter
- ☐ Valve guide cleaning tools
- ☐ Valve guide installing tool
- ☐ Valve guide removal tool
- ☐ Valve key tools
- ☐ Valve seat refinishing tools
- ☐ Valve lifting and spring compressing tools
- ☐ Valve clearance gaging tools
- ☐ Power valve lapper
- ☐ Valve keeper tool
- ☐ Valve seat tester
- ☐ Valve refacer
- ☐ Crankpin reconditioner
- ☐ Cylinder reconditioner
- ☐ Piston pin inserter
- ☐ Piston vise
- ☐ Piston ring compressor
- ☐ Piston ring groove cleaner
- ☐ Piston ring remover
- ☐ Piston pin hole reconditioner

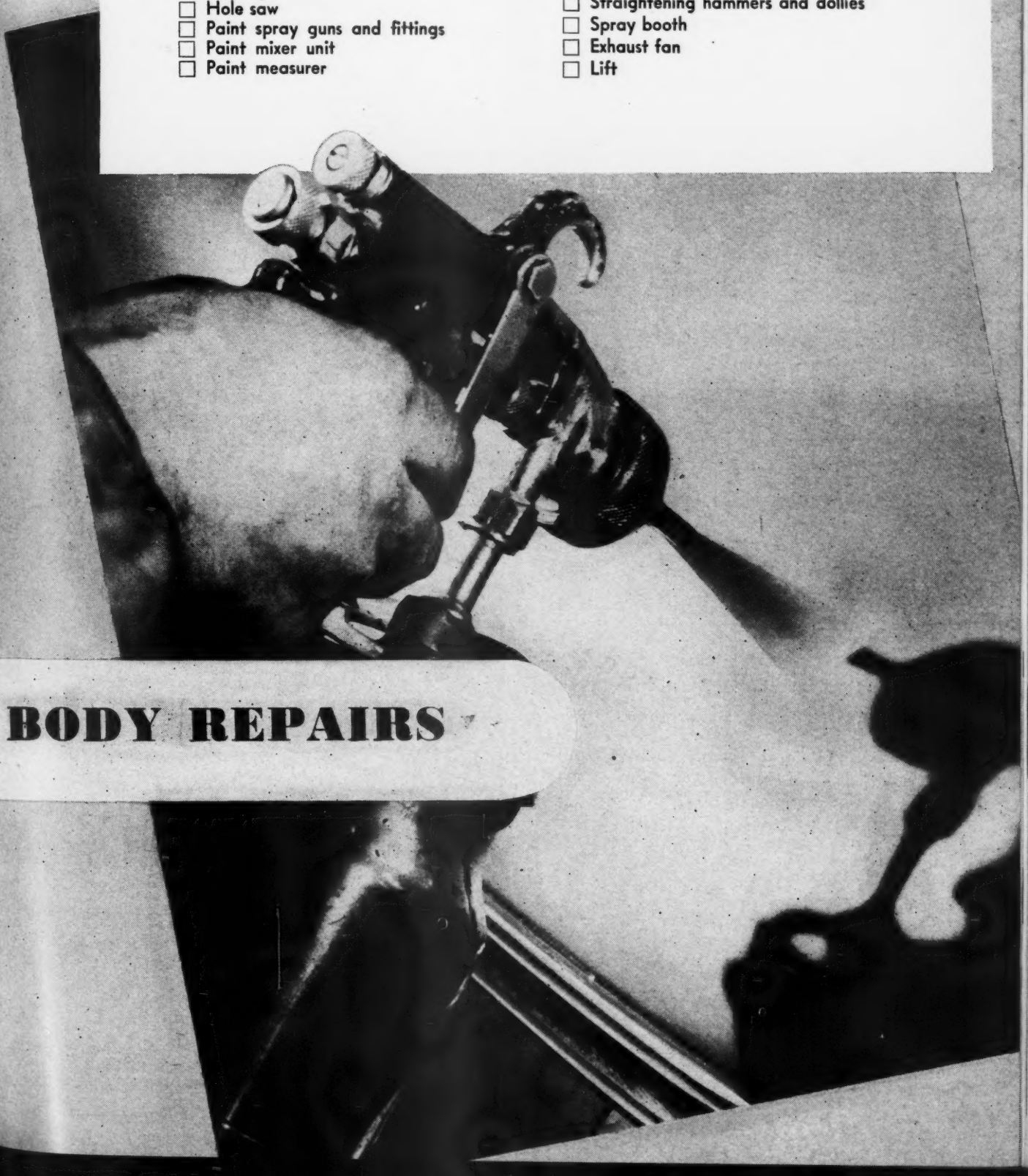
TIRES

CHECK YOUR EQUIPMENT ON THIS LIST

- ☐ Tire spreader
- ☐ Vulcanizer
- ☐ Tire valve rethreading tool
- ☐ Tire regroover
- ☐ Tire recapping equipment
- ☐ Emergency flat tire carrier for trucks
- ☐ Lift
- ☐ Car horses
- ☐ Garage jack
- ☐ Tire tube repair equipment
- ☐ Tire tube testing equipment
- ☐ Tire changing tools and equipment
- ☐ Wheel dolly

CHECK YOUR EQUIPMENT ON THIS LIST

- ☐ Polishing discs
- ☐ Frame straighteners
- ☐ Portable body-fender repair kit
- ☐ Glass replacement tools
- ☐ Tack hammer
- ☐ Metal finishing tools
- ☐ Hinge pin puller
- ☐ Shears and snips
- ☐ Sewing machine
- ☐ Power polisher
- ☐ Drying, baking and heating lamps
- ☐ Chisels and gouges
- ☐ Wood saws
- ☐ Wood planes
- ☐ Hole saw
- ☐ Paint spray guns and fittings
- ☐ Paint mixer unit
- ☐ Paint measurer
- ☐ Welding equipment—gas and electric
- ☐ Striping tools
- ☐ Electric drill
- ☐ Assorted drills
- ☐ Hack saw
- ☐ Solder spray gun
- ☐ Silencer spray gun
- ☐ Spraying mask
- ☐ Goggles
- ☐ Soldering iron
- ☐ Separator
- ☐ Body straightening jack
- ☐ Power peening equipment
- ☐ Straightening hammers and dollies
- ☐ Spray booth
- ☐ Exhaust fan
- ☐ Lift



BODY REPAIRS

TUNE-UP

CHECK YOUR EQUIPMENT ON THIS LIST

- ☐ Spark plug tester and cleaner
- ☐ Engine analyzer
- ☐ Timing instruments
- ☐ Gas mileage tester
- ☐ Fuel pump tester
- ☐ Vacuum gage
- ☐ Compression gage
- ☐ Ammeter
- ☐ Voltmeter
- ☐ Float level gage
- ☐ Exhaust gas analyzer
- ☐ Carburetor metering rod gage
- ☐ Set of number drills
- ☐ Carburetor repair bench and tools
- ☐ Fuel pump repair and tools
- ☐ Coil tester
- ☐ Condenser tester
- ☐ Distributor tester
- ☐ Air cleaner servicing equipment

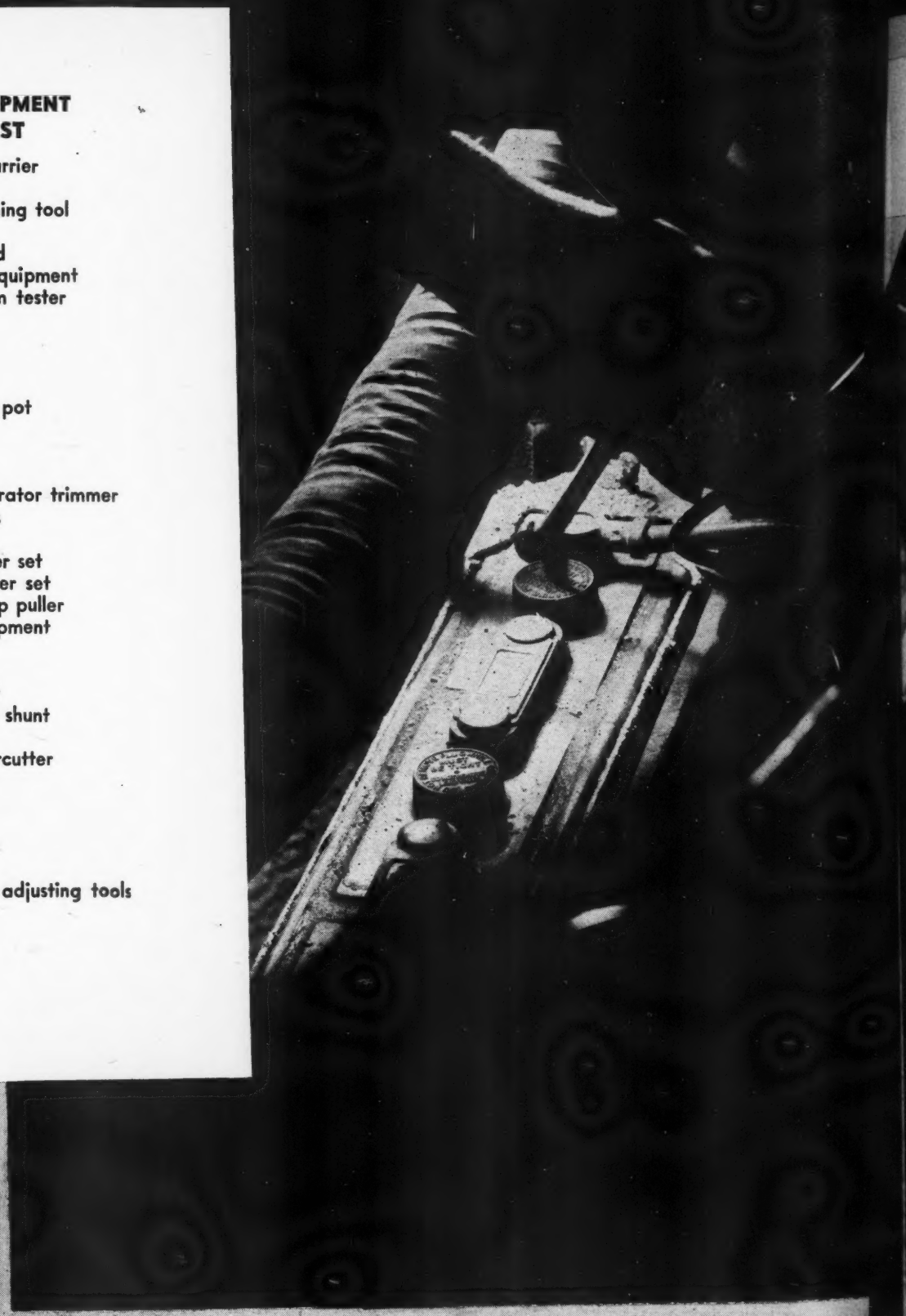
LUBRICATION

CHECK YOUR EQUIPMENT ON THIS LIST

- ☐ Hand oil cans
- ☐ Oil measures
- ☐ Spray guns for penetrating oil
- ☐ Hand grease guns
- ☐ Gear case flushers
- ☐ Lubrication dispenser for transmission and differentials
- ☐ High pressure lubricating gun
- ☐ Drain plug wrenches
- ☐ Engine oil dispensers
- ☐ Lube hose reels
- ☐ Dispensing pump
- ☐ Lubricator (central system)
- ☐ Grease gun filler
- ☐ Pry bar
- ☐ Screw extracter
- ☐ Car shaker and rocker
- ☐ Air cleaner cleaner
- ☐ Spring lubricating gun
- ☐ Lift
- ☐ Graphite dispenser
- ☐ Wheel bearing repacker

CHECK YOUR EQUIPMENT ON THIS USEFUL LIST

- ☐ Storage battery carrier
- ☐ Wire stripper
- ☐ Wire terminal forming tool
- ☐ Distributor tester
- ☐ Electrical test stand
- ☐ Magneto testing equipment
- ☐ Battery brake drum tester
- ☐ Acid funnels
- ☐ Terminal pullers
- ☐ Acid syringe
- ☐ Battery fillers
- ☐ Battery compound pot
- ☐ Lead pot
- ☐ Lead ladle
- ☐ Lead scraper
- ☐ Battery plate separator trimmer
- ☐ Battery plate press
- ☐ Battery pliers
- ☐ Battery post builder set
- ☐ Battery post reducer set
- ☐ Battery plate group puller
- ☐ Lead burning equipment
- ☐ Wire brushes
- ☐ Hydrometers
- ☐ Electrical test light
- ☐ Volt-ammeter with shunt
- ☐ Growler
- ☐ Commutator undercutter
- ☐ Lathe
- ☐ Battery charger
- ☐ Rubber apron
- ☐ Rubber gloves
- ☐ High light tester
- ☐ Voltage regulator adjusting tools
- ☐ Soldering irons
- ☐ Coil tester
- ☐ Condenser tester

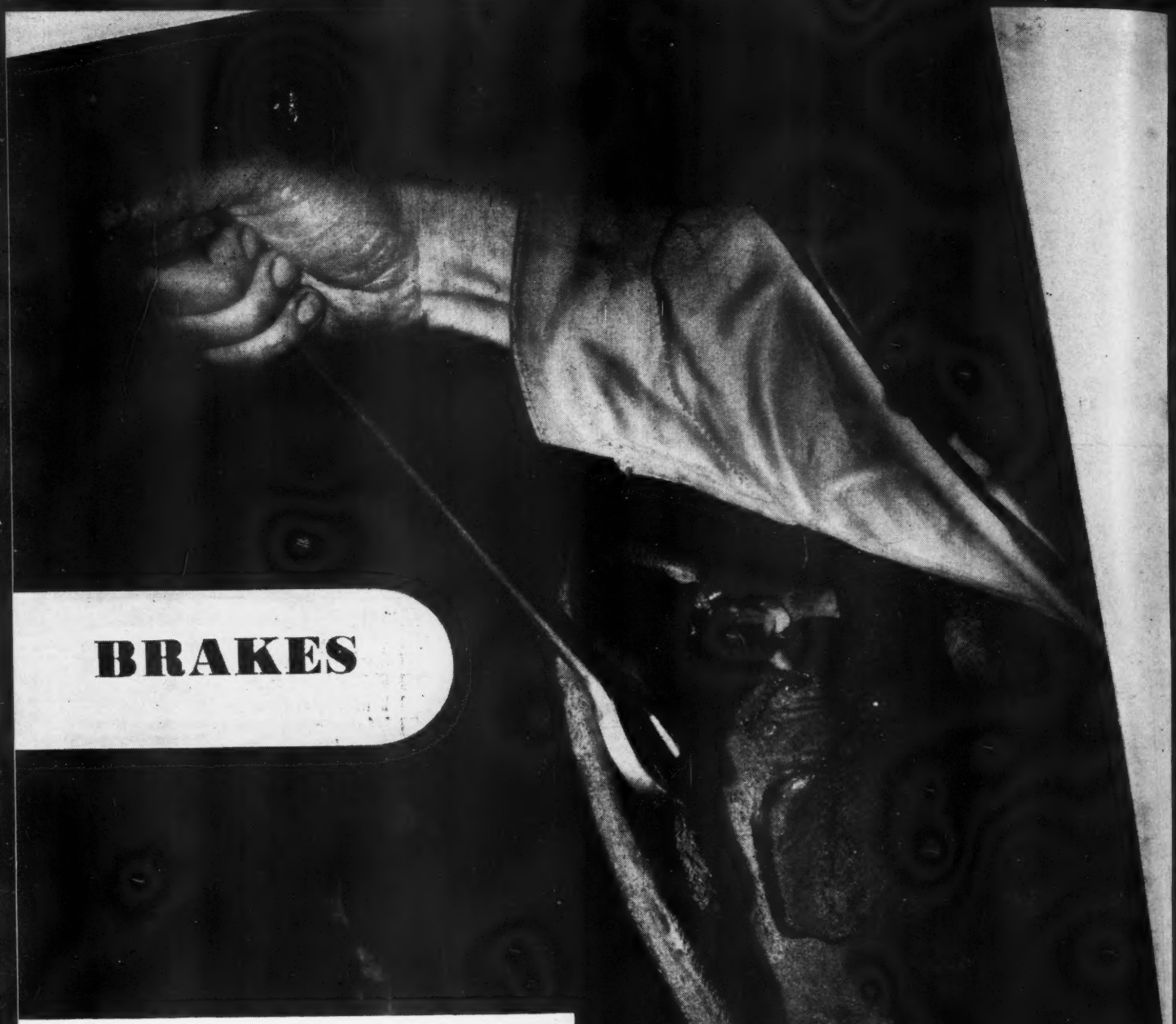


ELECTRICAL

TOOL KIT

CHECK YOUR TOOLS ON THIS COMPREHENSIVE LIST

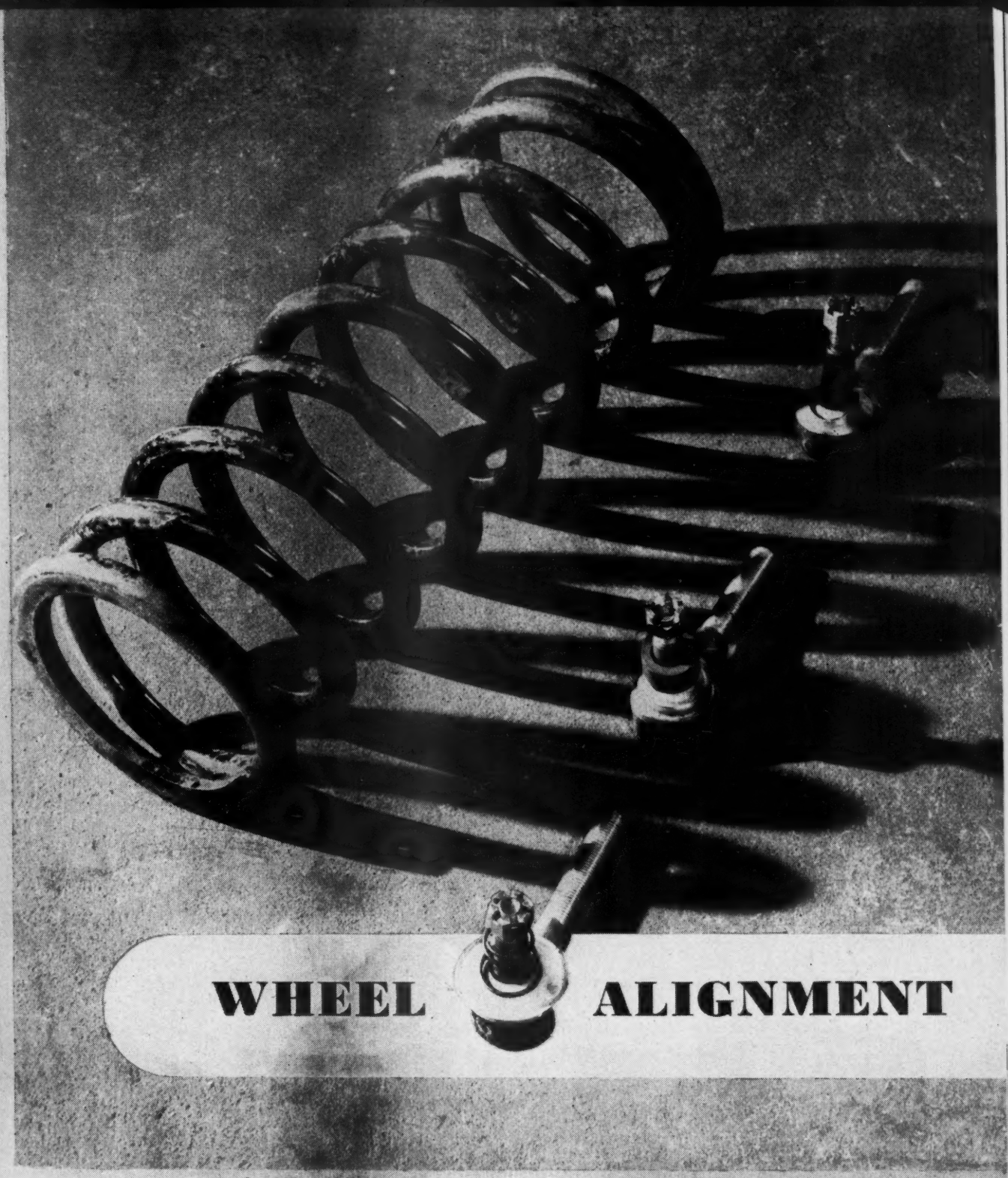
- ☐ Shears
- ☐ Cold chisels
- ☐ Steel rule
- ☐ Feeler gages
- ☐ Pliers
- ☐ Screw drivers
- ☐ Putty knives
- ☐ Cotter key pullers
- ☐ Spanner wrenches
- ☐ Box end wrenches
- ☐ Open end wrenches
- ☐ Socket wrench sets
- ☐ Adjustable wrenches
- ☐ Pipe wrenches
- ☐ Hub cap wrenches
- ☐ Stud remover
- ☐ Hammers
- ☐ Soft hammer
- ☐ Drifts, steel and brass
- ☐ Center punches
- ☐ Tappet wrenches
- ☐ Magnet
- ☐ Socket head wrenches
- ☐ Phillip head screw drivers
- ☐ Battery terminal puller
- ☐ Water pump pliers
- ☐ Drag link wrench
- ☐ Torque wrench
- ☐ Axle knockers
- ☐ Tire lug wrench
- ☐ Point file
- ☐ Valve guide removing tools
- ☐ Valve key remover
- ☐ Valve lifter
- ☐ Hack saw
- ☐ Carburetor jet wrenches
- ☐ Brake pliers
- ☐ Ignition wrench set
- ☐ Pry bar
- ☐ Spark gap gage
- ☐ Snap ring tools
- ☐ Files, assorted
- ☐ Tote tray
- ☐ Tool box
- ☐ Portable tool stands
- ☐ Bushing removers
- ☐ Test light (continuity)
- ☐ Ignition timing test light
- ☐ Portable plug tester
- ☐ Flash light



BRAKES

CHECK YOUR EQUIPMENT ON THIS LIST

- ☐ Brake testing equipment
- ☐ Pedal depressor
- ☐ Brake drum reconditioner
- ☐ Brake filler tank
- ☐ Brake bleeder
- ☐ Brake spring removing and replacing tool
- ☐ Brake lining stretcher
- ☐ Brake cylinder cleaning and polishing tool
- ☐ Brake lining cementing equipment
- ☐ Brake riveter
- ☐ Brake wrench sets
- ☐ Brake lining drill
- ☐ Brake cylinder hone
- ☐ Brake shoe clearance gages
- ☐ Brake drum gages
- ☐ Decelerometer
- ☐ Brake lining sander
- ☐ Lug wrenches
- ☐ Brake lining punch
- ☐ Wheel cylinder clamps
- ☐ Brake lining cutter
- ☐ Lift

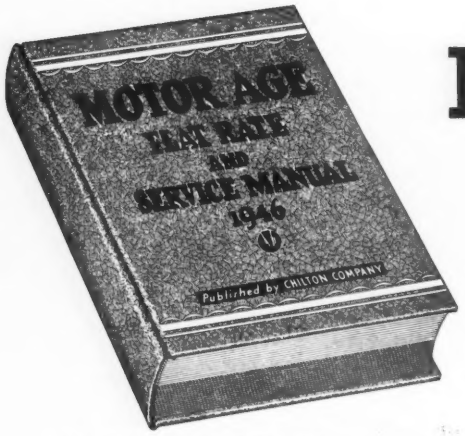


WHEEL ALIGNMENT

CHECK YOUR EQUIPMENT

- ☐ Camber-caster adjusting tools
- ☐ Axle-bending equipment
- ☐ Camber, caster and toe-in gages
- ☐ Wheel alignment equipment
- ☐ Wheel balancer
- ☐ Wheel straightening press
- ☐ Jacks and horses
- ☐ Track bar
- ☐ Bending bar
- ☐ Pry bar

"Could be," said Pop. "But that ain't the way a good repairman operates. The guy who can answer the hard ones gets some place—and saves himself a lot of work."



Much of Pop O'Neill's wisdom comes from knowing the best sources of information. This flat rate manual is one of the most complete reference works a repairman can get.

Pop Plugs a Leak

TOMMY WINTERS was raising the hood of the 1941 Chrysler in the end bay when Larry Tate strode over to him. He had a wrench in his hand and a scowl on his face.

"Ain't we got enough to do around here," Larry demanded, "without fritterin' away more time on that job?"

"But Pop said—" began Tommy.

"I heard what he said. This job belongs to some guy who's visitin' in town and don't need it till tomorrow night."

"That was this morning. A while ago Pop said he wants it tonight."

MOTOR AGE

BASIC COURSE FOR

MECHANICAL TRAINING

Pop stops a mystery leak from down the block by putting his finger on the one spot in the cooling system that his two mechanics had forgotten all about

By J. Edward Ford

"Well, let him take it," said Larry. "That little leak in the coolin' system ain't gonna hurt nothin'."

"If anybody tells Pop we couldn't find the trouble," said Tommy, "It will have to be you."

"I won't be tellin' any lie."

"Pop will think we're awful dumb."

"If he's so smart," said Larry, "why don't he find out where the water's goin' to on this job?"

"I guess he figures that's our headache. And it sure is. We haven't been able to find a thing."

"We done everything we had time to do. You checked the radiator and the water pump. They're okay."

Tommy nodded.

"That only leaves one thing to do," said Larry, indicating the block with the wrench. "Let's jerk the head and check the head gasket."

"You really think that's the trouble?"

"It's the only thing that's left."

"Then why don't we do it?" asked Tommy.

Larry glanced at the other cars lined up along the shop wall. "Because," he said, "we got more important things to do. Them other crates belong to regular customers."

Tommy rubbed the back of his head thoughtfully. "Pop is going to raise the roof if this job isn't ready by five."

"Who cares? He said there was plenty of time and he ain't told me no different. I got enough to worry about without breakin' down because Pop gets hysterics. Get on over there and drop the pan on that Buick. I'll take care of Pop."

Tommy was uneasy the rest of the day. He knew Larry was boss when Pop was not around, but the fact remained that Pop expected the work on the Chrysler to be finished that day. And as soon as he learned that practically nothing had been done, it was a question whether he would blame Larry or Tommy. The latter was replacing the Buick pan when Pop came out into the shop about 4 o'clock and called to Larry:

"Is that Chrysler ready?"

Larry pulled his head from under an upraised hood and shouted back: "No!"

From his position on the creeper, Tommy could not see Pop's face, but from memories of similar encounters he could imagine it turning a flaming red.

"I told Tommy I wanted that car tonight," he heard Pop saying. "Don't anybody pay no attention to orders around here any more?"

"We got more important cars to work on," said Larry. "Besides you told me that crock wasn't in no hurry."

"I told Tommy I wanted it before five."

"But you didn't tell *me*."

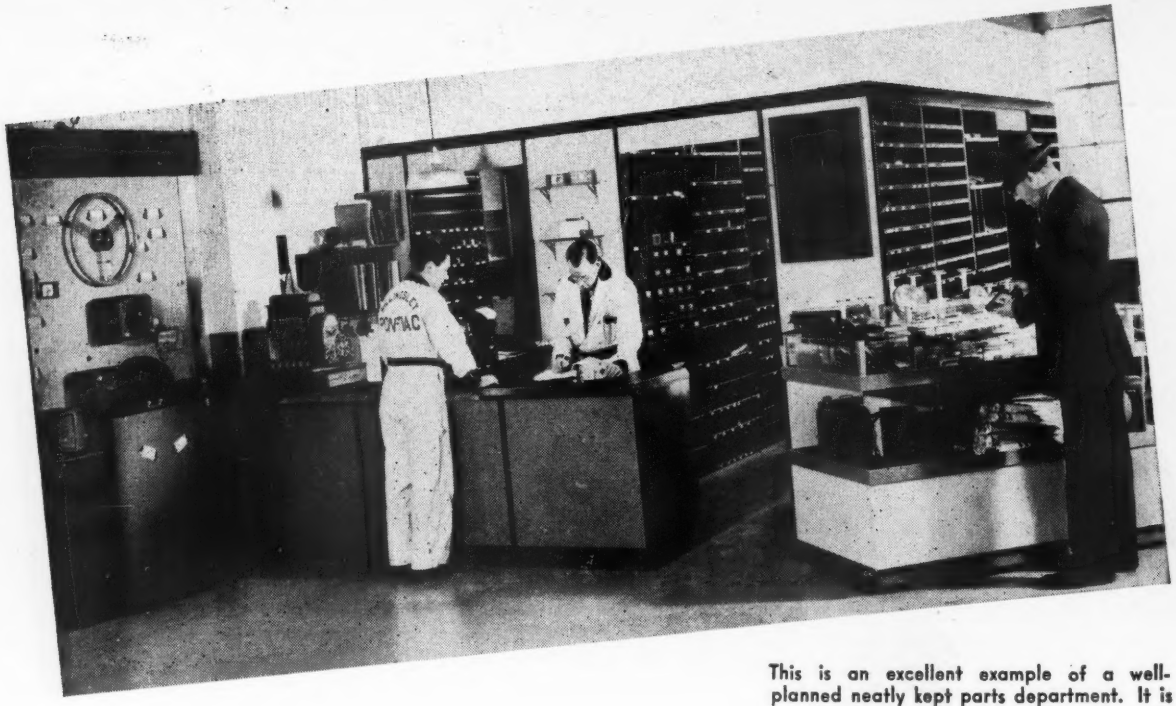
"No, I didn't," said Pop, running a hand through his white hair. "I got tired waitin' for you to come out of the men's room."

"Oh, around here a guy ain't supposed to —"

"A guy around here is supposed to do some work once in a while," said Pop. "Maybe I'd be better off if I put a work bench in there and kept them pulp magazines out here." Larry glared, but Pop went on. "But that ain't gettin' the Chrysler fixed. Did you locate the leak?"

"We checked everything. The radiator is as tight

(*Continued on page* 96)



This is an excellent example of a well-planned neatly kept parts department. It is as pleasing to the customer's eyes as to the manager's.

Stock Control Saves Profits

Intelligent business planning requires an accurate check on your parts inventory

These questions point up your inventory problem.

1. How much cash do you have?
2. How much credit do you have?
3. Are you stocking any items on a consignment basis?
4. How long does it take to get parts from your wholesaler?
5. What makes and models of cars do most of your customers drive?
6. What type of work do you specialize in?
7. Will your geographical location affect the type of jobs you get?

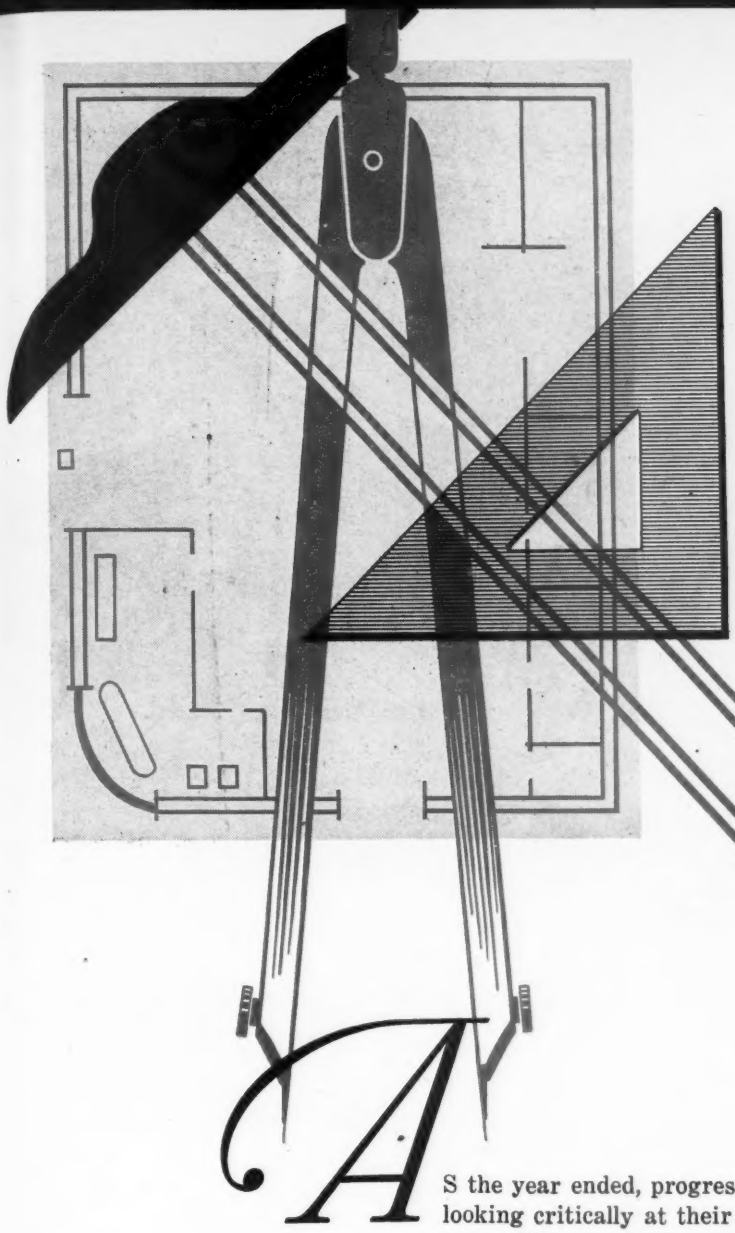
by ***CHARLES M. KENYON***

BUILDING up a satisfactory parts inventory and at the same time having accurate records to show you what you have and why is one of the most important aspects of a successful business. The man with all the facts on paper before him can answer the big question. Did I get the greatest possible profit out of the money I invested in salable goods? That is all that "parts inventory" or "stock control" is good for. A good "system" means nothing by itself. A good man means everything. The system is simply an aid to the man in running his business. But the man without the system has a long, long row to hoe.

The first problem is to build an inventory—to lay in a stock. There are many possible sources of supply. These range from manufacturers, factory representatives, wholesalers or jobbers, car dealers, wagon jobbers, specialty shops, on through other repair shops. Probably the most common way of purchasing is through a wholesaler or jobber who has headquarters relatively near to the shop.

Whatever the source of supply may be, stand firm on one resolution. All parts must be of standard grade. The advantages of buying brand name merchandise are many and they loom large. Most important to you as a repair man is the fact that you know what you are getting . . . that you know what you are putting into the job at hand. Almost equally important, when competition once again becomes a factor in success, is the amount of advertising that these brand names do—advertising that eventually helps you. If a customer once gets the notion that you are using inferior

(*Continued on page* 110)



Planning Building Plans

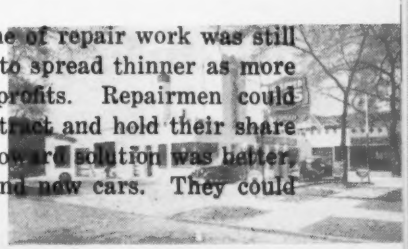
Postwar design and construction in the automotive field show a trend toward low massive lines, large windows, and better lighting facilities throughout

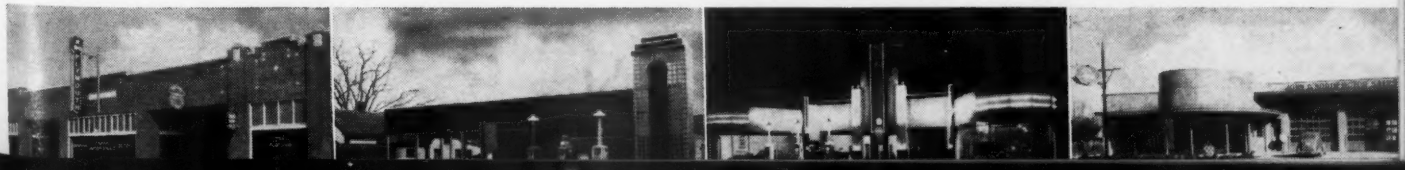
by RICHARD L. REDDY

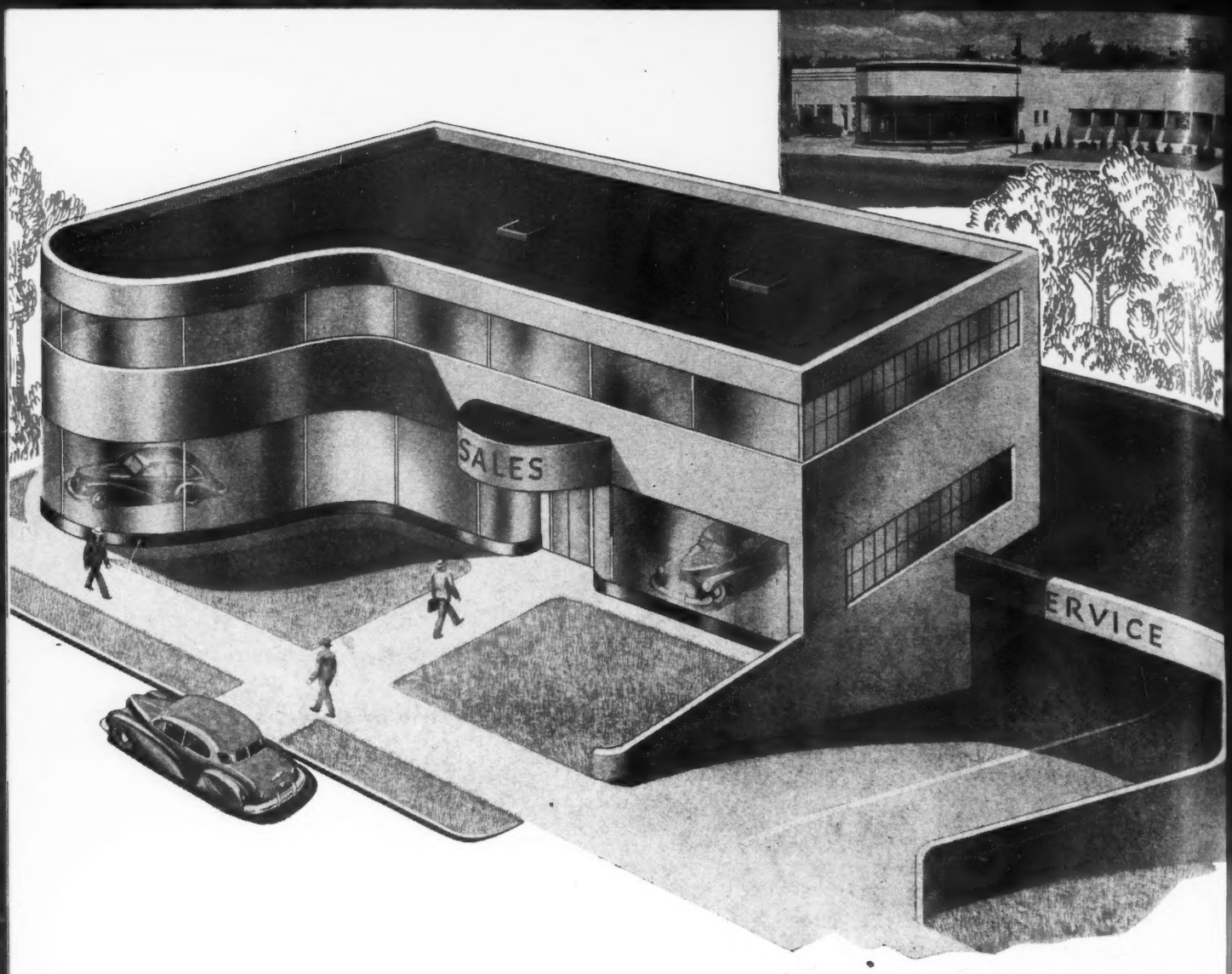
AS the year ended, progressive car dealers and independent repair men were looking critically at their shops with an eye to face-lifting or even rebuilding. The reasons were that postwar dreams were still just dreams for most Americans as the average car went into its tenth year of life with little chance of immediate replacement in sight. Too few of the strike-delayed new cars had been delivered to improve a nation-wide picture of car starvation. One factor, however, had materially changed . . . competition among dealers and repairmen was stiffening.

The beginning of '46 showed about 42,000 independent repair shops and 32,400 car and truck dealers in business. By December the number had swelled to over 46,800 independents, 35,300 car and truck dealers, recruited chiefly from veterans who had learned some automotive maintenance in the Services and were attracted by the GI Bill-sponsored chance to work for themselves. "Filling stations" too were widening their scope. Said Shell to their dealers: "Tomorrow's service station operator . . . will be equipped to make replacement of parts and all repairs except those of a major nature." Thirty per cent of all Buick dealers replying to a home office questionnaire signified their intention of rebuilding.

The conclusion was obvious. As big a total volume of repair work was still available as during war years, but it was beginning to spread thinner as more and more shops opened and diluted fat wartime profits. Repairmen could expect less work per shop. Their problem was to attract and hold their share of the rich maintenance market. And the first step toward solution was better, newer buildings, better merchandising of services and new cars. They could







renovate or rebuild . . . one or the other they must do if shop and showroom appearance was to fulfill their primary function of bringing in customers.

The basic function of the shop or dealership exterior is to attract the greatest possible number of customers by having a modern, eye-arresting facade. Once inside, the patron must be met by a picture of smooth, efficient service, equipped to complete his work expertly in the shortest possible time.

First step toward fulfilling these requirements is the choice of a good location if the operator is planning an entirely new building or if he finds that a change to a new site will materially increase his business.

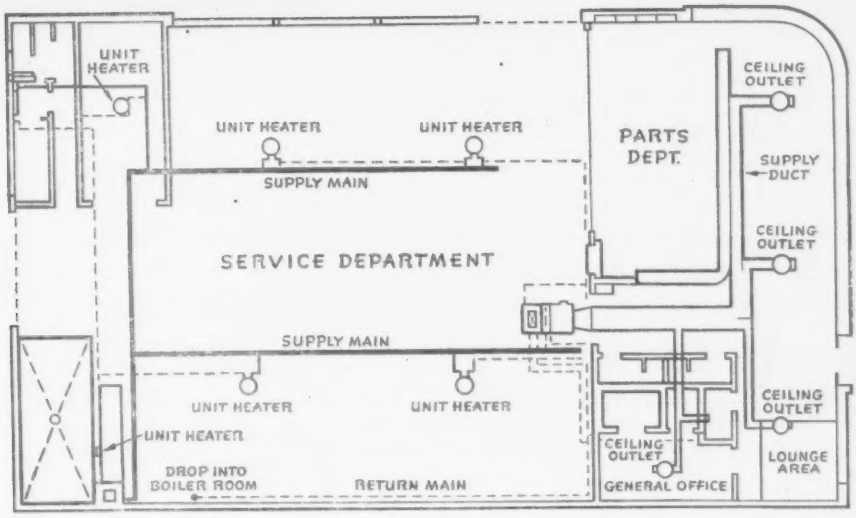
Fundamentally, location is based on the number of cars operated within shop's contact range and the number passing that particular spot each day. Such information is obtainable by means of a traffic count and through the local Motor Vehicle Bureau. This data should be noted on a large scale map of the vicinity. In addition, the location of competing shops, factory sites, and residential areas and developments should be noted. Frequently, assistance in determining business potentiality of different localities can be obtained from banks, oil companies, equipment manufacturers and similar obviously interested businesses.

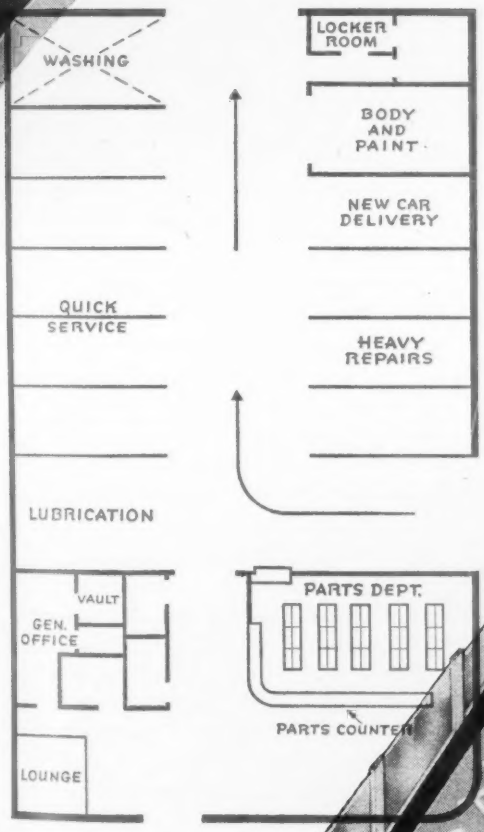
Any location is a compromise. Experience proves, however, that there is good business strategy in locating *out* of the so-called downtown area. Such a site usually affords important economies from an investment and operating standpoint and provides greater service customer parking facilities, a distinct sales asset. Outlying property can usually be purchased at a lower price, thus increasing the amount of land obtainable to accommodate adequate sales and service room, used car facilities, and additional area for service customer cars.

In other words, a site should be chosen that promises substantial returns not only at the time of selection, but for years ahead and price or rental, while important, should not be sole determinants if the expenditure of more money will insure higher profits in the long run. The independent shop operator and car dealer cannot afford to be less careful than the big oil chains which undertake exhaustive, long-range research before erecting new stations.

The site chosen, the next step is to plan a building that most advantageously fits the lot, that will attract the passing driver with a modern, eye-arresting ap-

Planning Building Plans

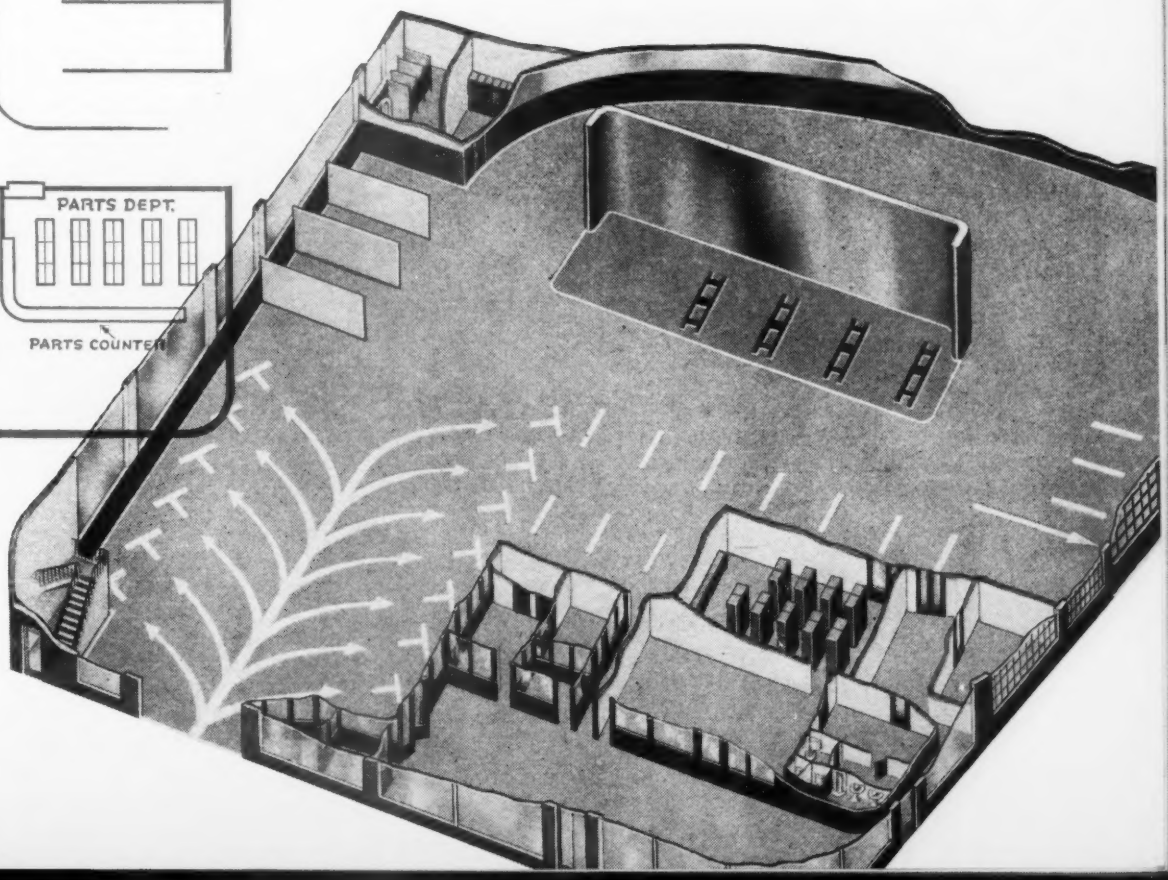


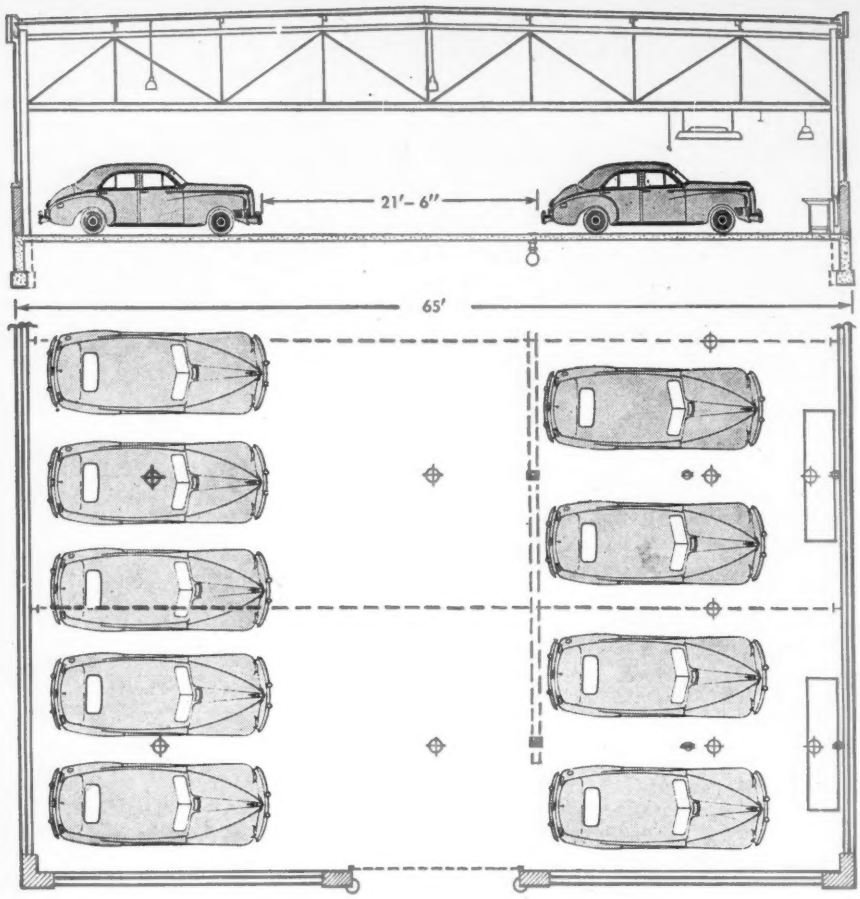


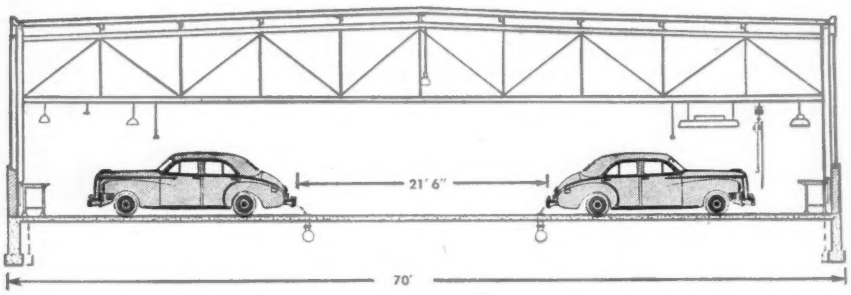
Above. Three modern establishments designed to attract the maximum number of customers.

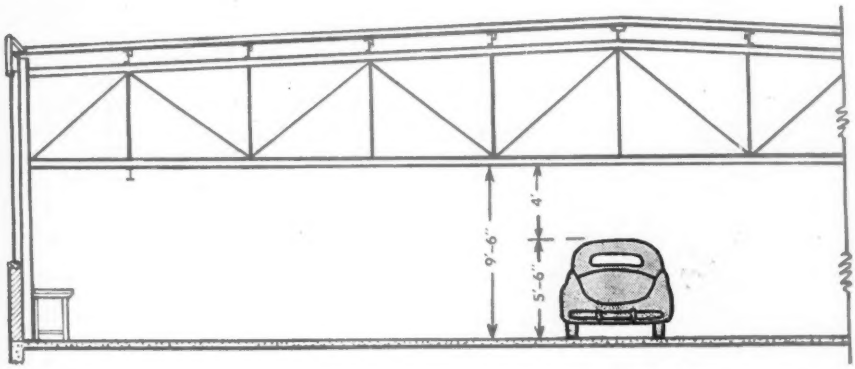
Upper left. A large, three level dealership and repair shop designed to utilize a sloping plot. Parking area is available on the roof over the service floor.

Below. A typical modern floor lay-out showing the most efficient allotment of space for service floor, show room, parts racks and offices.









Area	Measurement in Feet
Sales Room (New Cars)	400 sq. ft. per car displayed.
Manager's Office	9 x 10 to 10 x 12.
General Office	40 sq. ft. per person accommodated.
Parts Department	6 per cent to 7 per cent of total space.
Doors to Street	12 to 20 wide. 12½ ft. high—minimum.
Doors to Alley	14 to 20 wide. 12½ ft. high—minimum.
Aisles—90 deg. parking	18 wide clear, small cars.
Aisles—90 deg. parking	21 wide, longer cars.
Aisles—60 deg. parking	16 wide clear.
Customer Reception Stalls	4 apart, 4 from wall.
Waiting Room or Service Manager's Office	Use space available.
Car Space Storage	2 apart—1 from wall.
Car Space Repair Stall	4 apart—5 from wall.
Hydraulic Lift	22 x 20 clear for complete rotation, add 14 x 20 for additional lift.
Four Post Lift, small	8 x 16.
Four Post Lift, large	8 x 8.
Brake Testing Machine	10 x 24 clear for 90 installation.
Front End Machine	11 x 22.
Paint Spray Booth	14 x 22 minimum (add 10 width for each additional car).
Wash Rack	14 x 22 (add 10 width for each additional car).
Body Shop Stalls	14 x 20 (add 10-12 for each additional stall).
Repair Stalls	10 x 22.
Ramp	15 per cent grade—average.

Top. Floor plan of a repair shop sixty-five feet wide. This arrangement provides for storage on one side of the shop and a work area with work-benches along the wall on the other side.

Center. If the width of the floor is increased to seventy feet, the additional five feet of width provides for installing work-benches along both walls.

Bottom. For working on passenger cars, nine and a half feet is sufficient head clearance unless a lubrication lift is used.

Planning Building Plans

pearance, and that leaves sufficient outside space to permit adequate service customer parking. To pay its way the new building must satisfy five main points. It must:

1. Get immediate, favorable attention.
2. Present merchandise and service in an attractive, conspicuous manner.
3. Provide for advantageous installation and display of ultra-modern time and labor-saving methods and equipment.
4. Provide sound working conditions for personnel.
5. Provide sufficient, properly allocated space to insure efficient operation and the correlation of all these factors in one unit that most effectively fulfills the requirements of space and location.

Accompanying illustrations show some examples of shop exteriors and floor plans. Some, of course, may be too ambitious to suit some companies working on modest building or renovating budgets. General trends are indicated, however, and the current tendency toward simplicity of line and bold, functional design is apparent.

Since required floor space will largely determine final structure, estimates for building size should be based on a careful estimate of potential work. General dimensions for departments and various pieces of equipment are given in the accompanying table and will be found useful in making floor plans.

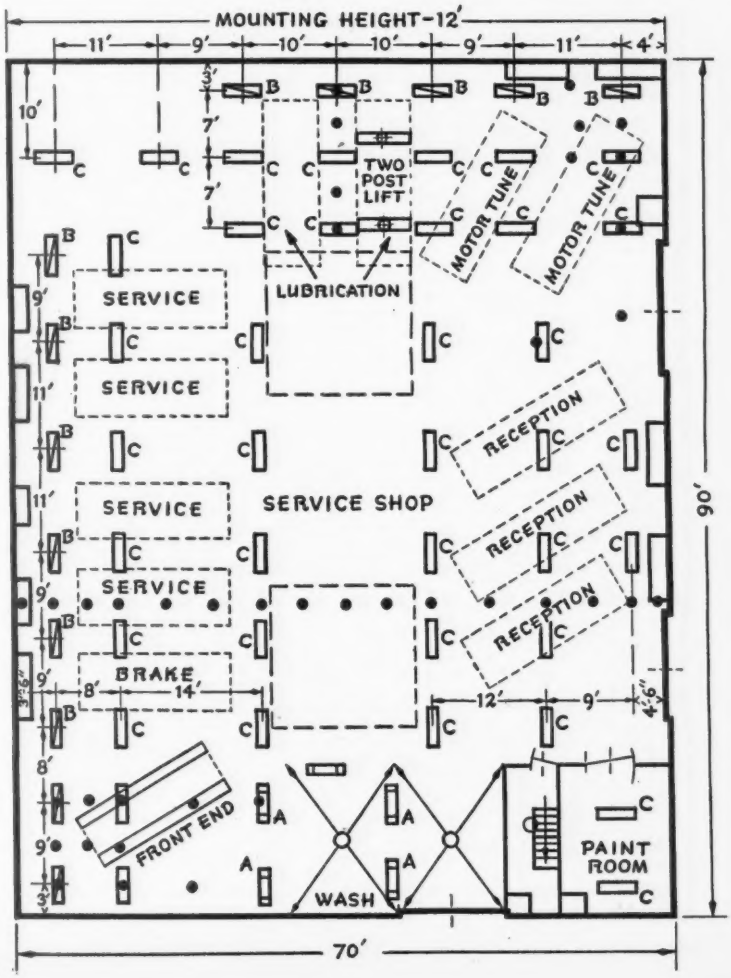
In addition to these figures, the most efficient width for floor space is in 65 ft. units (65, 130, etc.), giving a ratio of productive space to aisle or non-working space of about 2 to 1. This ratio allows adequate working space, keeps traffic moving and permits easy handling and parking of the cars. Ramps, it has been found, are not suitable for buildings less than 85 ft in width and 140 ft in length, nor should gradients ever be over 20 per cent. If curved, ramps should have a minimum outside turning radius of 30 ft.

When making a floor plan for either a shop or salesroom, the simplest plan is to draw the area of the floor to scale, marking location of door, windows, pillars, etc. Then cut out pieces of cardboard, also to scale, to represent the various pieces of equipment, cars, etc. By shifting these about on the drawing of the floor, the most efficient plan can quickly be determined.

Roof or ceiling height is determined by whether or not trucks are serviced. If only passenger cars are handled, 9′ 6″ clearance is sufficient. A 12′ minimum is necessary, however, where lubrication lifts or other hoist equipment is installed. Trucks should have at least 13 ft. roof clearance.

Carefully planned departmentalization promotes effi-

(*Continued on page* 106)



Note spacing and arrangement of lights providing adequate illumination for the different departments. All dots signify that intensity of illumination after 100 hours of operations on the lamps proved entirely satisfactory.

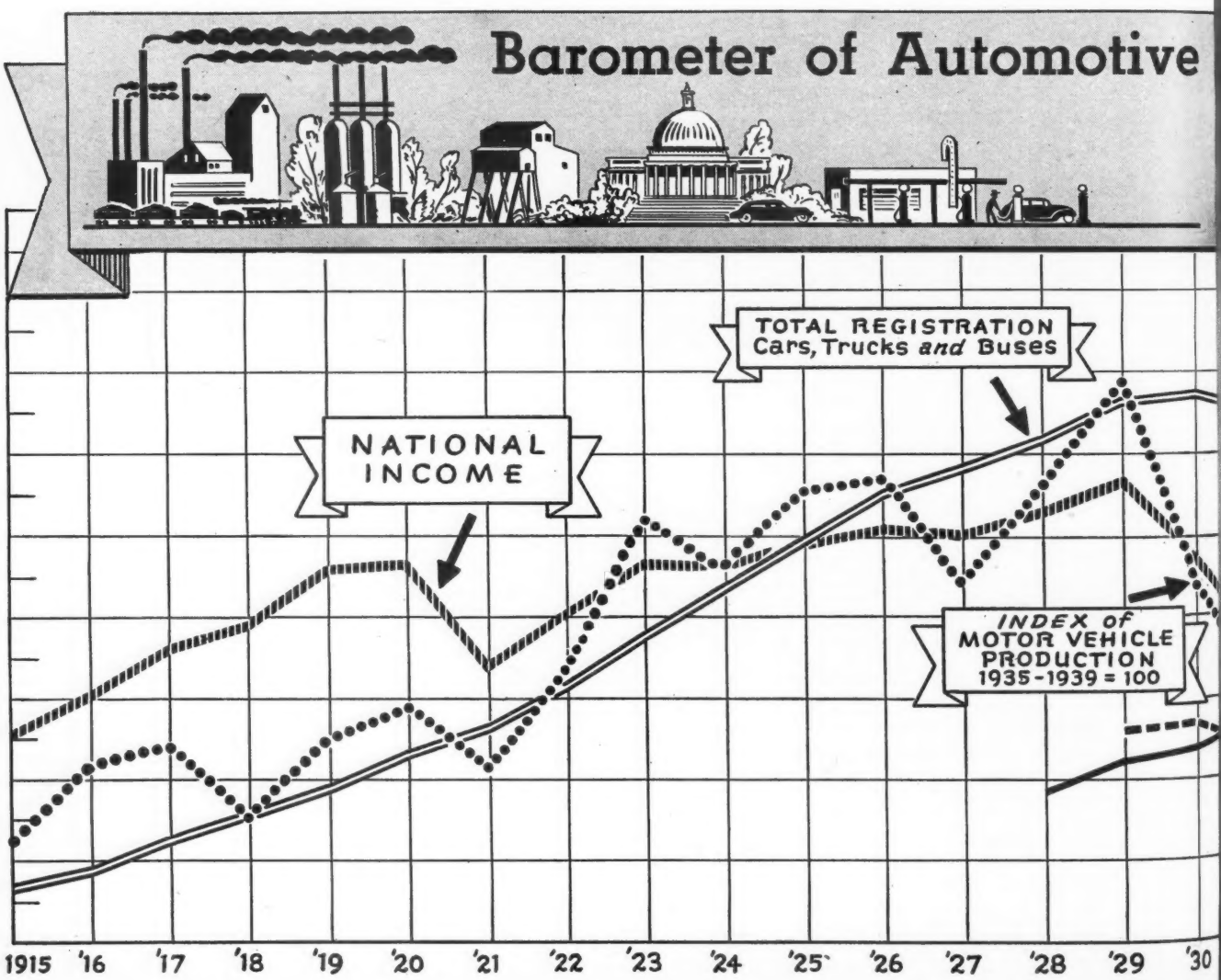
MOTOR AGE
Automotive Business

AS an aid in gaging what is ahead for automotive dealers and service men, MOTOR AGE presents these statistical charts and data.

Of particular interest are those data, taken from the last Census of Distribution and Service Establishments, which show the various sizes of dealer and service establishments according to the number of their employees and also to their volume of sales.

Particular attention should be devoted to the estimates of the wholesale value of parts and accessory business done in the various states during 1945. To the best of our knowledge this is the first time such an estimate has been published.

The size to which the maintenance market has grown is astounding. Today—maintenance establishments are installing parts and accessories with a wholesale value of about 1½ billion dollars. That's wholesale value. On a basis of retail price the volume would exceed two billion dollars and the labor to install these parts would easily exceed another two billion.



Guide

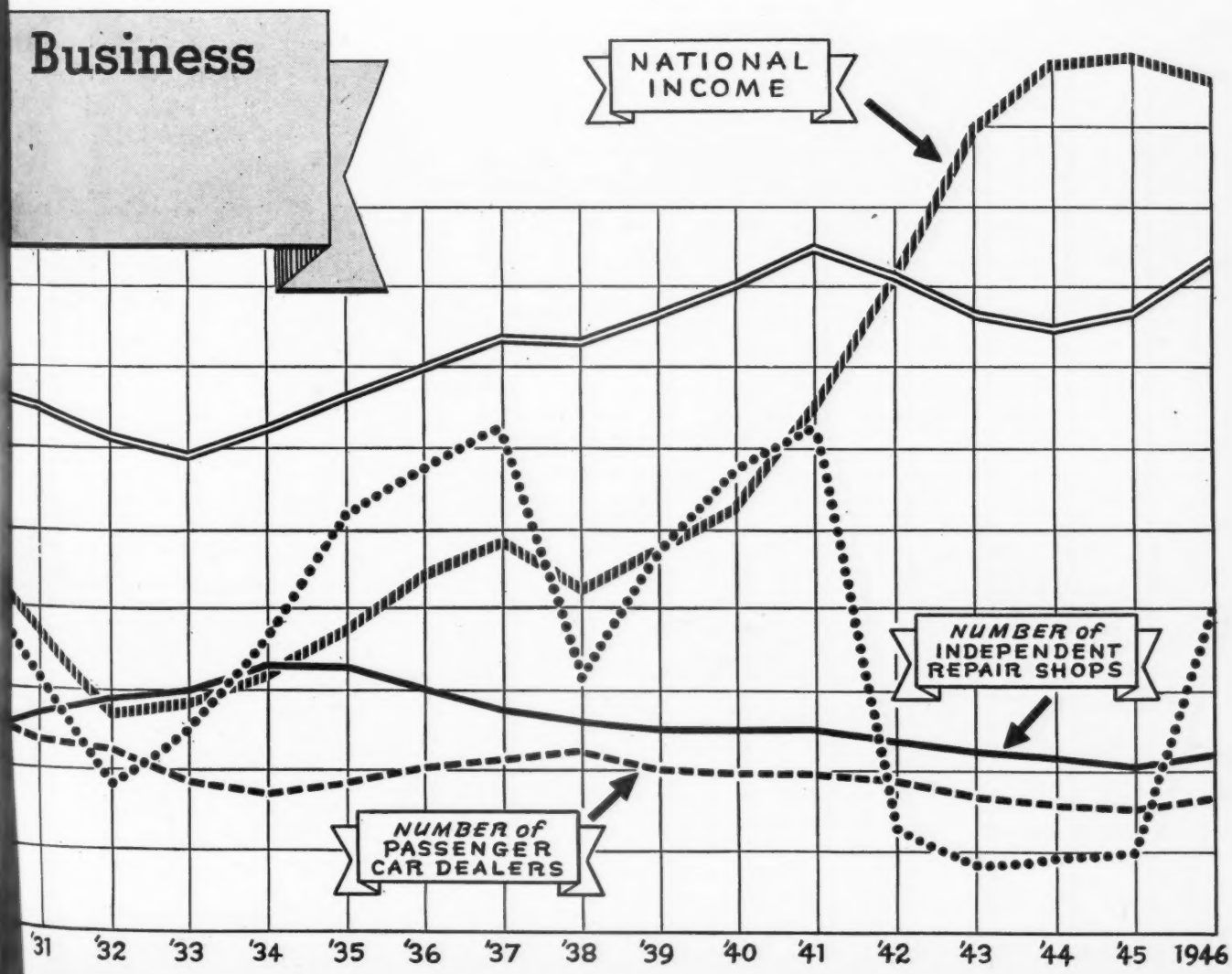
Another feature is the parts and equipment sold currently in greatest volume. These are presented following numerous requests from MOTOR AGE readers and are based on a detailed survey of the field. This feature will be continued monthly.

These and related data are presented so that the individual operator can check his pre-war and his current business with the comparable periods in his particular state. In this way he will be able to estimate more accurately his position in the field.

TWENTY MOST ACTIVE JOBBER LINES

PARTS JOBBERS PARTS AND CHEMICALS	FULL LINE JOBBERS EQUIPMENT AND TOOLS
1 Accessories	1 Hand Tools
2 Bearings (Motor)	2 Air Compressors
3 Gaskets	3 Grinders (Refacing)
4 Rings (Piston)	4 Floor Jacks
5 Electrical Parts	5 Lifts & Hoists
6 Bearings, (Anti-Friction)	6 Grinders (Valve Seat)
7 Muffler & Pipes	7 Drills (Electric)
8 Brake Fluid	8 Lubrication Equipment
9 Ignition Parts	9 Power Buffers
10 Front End *	10 Battery Chargers
11 Brake Lining	11 Grinders (Bench)
12 Batteries	12 Miscellaneous
13 Spark Plugs	13 Garage Jacks
14 Anti-Freeze	14 Brake Lining Equipment
15 Pins (Piston)	15 Drills (Portable)
16 Fan Belts	16 Front End Equipment
17 Engine Parts	17 Spraying Equipment
18 Pistons	18 Testing Equipment
19 Clutch Parts	19 Cleaners (Steam)
20 Transmission Parts	20 Welding

By MARCUS AINSWORTH



Motor Vehicle Dealers—New and Used*

Showing the Number of Dealers and Their Sales Volume

State	Motor-Vehicle Dealers (New)		Used-Car Dealers	
	No. of Outlets	Sales Volume	No. of Outlets	Sales Volume
Alabama	357	$64,335,000	42	$746,000
Arizona	126	20,815,000	33	286,000
Arkansas	355	47,324,000	34	852,000
California	1,766	365,977,000	979	32,957,000
Colorado	414	54,935,000	136	2,358,000
Connecticut	441	73,481,000	157	2,457,000
Delaware	64	14,451,000	16	254,000
District of Col.	68	40,478,000	16	819,000
Florida	439	84,447,000	133	6,211,000
Georgia	535	81,381,000	96	1,682,000
Idaho	234	28,364,000	16	294,000
Illinois	2,092	308,126,000	334	10,284,000
Indiana	1,165	138,793,000	174	3,955,000
Iowa	1,224	109,711,000	112	2,301,000
Kansas	838	68,274,000	137	1,974,000
Kentucky	529	64,667,000	61	1,257,000
Louisiana	331	62,212,000	58	3,678,000
Maine	304	34,681,000	61	967,000
Maryland	376	67,919,000	89	2,466,000
Massachusetts	941	158,426,000	168	3,793,000
Michigan	1,493	236,481,000	438	17,163,000
Minnesota	1,124	113,049,000	123	3,589,000
Mississippi	349	44,117,000	7	333,000
Missouri	970	129,523,000	292	6,986,000
Montana	275	33,949,000	15	309,000
Nebraska	550	48,817,000	63	1,278,000
Nevada	53	8,250,000	4	82,000
New Hampshire	199	22,478,000	28	471,000
New Jersey	842	159,085,000	206	5,883,000
New Mexico	155	21,142,000	26	378,000
New York	2,311	418,304,000	583	21,604,000
North Carolina	647	95,339,000	79	1,398,000
North Dakota	280	24,290,000	9	130,000
Ohio	2,097	282,804,000	446	12,425,000
Oklahoma	639	81,741,000	212	3,445,000
Oregon	356	62,043,000	69	1,739,000
Pennsylvania	2,455	320,703,000	282	5,418,000
Rhode Island	145	23,860,000	65	1,829,000
South Carolina	342	48,924,000	95	2,130,000
South Dakota	300	23,783,000	52	907,000
Tennessee	426	75,800,000	64	1,995,000
Texas	1,672	258,099,000	520	14,984,000
Utah	163	22,326,000	25	493,000
Vermont	155	18,356,000	15	124,000
Virginia	589	78,226,000	51	1,878,000
Washington	536	84,494,000	153	2,817,000
West Virginia	414	46,725,000	36	852,000
Wisconsin	1,329	121,596,000	154	3,413,000
Wyoming	164	17,124,000	18	146,000
Totals	33,609	$4,810,225,000	6,980	$193,790,000

* From Retail Census of Distribution for 1939—Bureau of the Census.

Sales Volume includes sales of new and used vehicles, parts and accessories, service labor, etc.

Filling Stations*

State	No. of Stations	% of U. S. Total
Alabama	3,750	1.55
Arizona	1,196	.49
Arkansas	3,037	1.26
California	15,218	6.29
Colorado	3,109	1.29
Connecticut	2,930	1.21
Delaware	640	.26
District of Col.	495	.20
Florida	4,653	1.92
Georgia	5,054	2.09
Idaho	1,361	.56
Illinois	12,097	5.00
Indiana	8,252	3.41
Iowa	6,967	2.88
Kansas	5,726	2.37
Kentucky	3,540	1.46
Louisiana	2,721	1.13
Maine	2,173	.90
Maryland	2,255	.93
Massachusetts	5,746	2.38
Michigan	10,941	4.52
Minnesota	6,692	2.77
Mississippi	2,203	.91
Missouri	9,499	3.93
Montana	1,349	.56
Nebraska	3,561	1.48
Nevada	352	.15
New Hampshire	1,229	.51
New Jersey	6,580	2.72
New Mexico	1,292	.53
New York	15,652	6.47
North Carolina	7,782	3.22
North Dakota	1,539	.64
Ohio	12,800	5.29
Oklahoma	6,106	2.52
Oregon	2,847	1.18
Pennsylvania	14,031	5.80
Rhode Island	1,116	.46
South Carolina	3,214	1.33
South Dakota	2,030	.84
Tennessee	3,422	1.41
Texas	15,738	6.51
Utah	1,184	.49
Vermont	963	.40
Virginia	5,083	2.10
Washington	4,413	1.82
West Virginia	2,516	1.04
Wisconsin	5,942	2.46
Wyoming	862	.36
Total—1939	241,858	100.00
Total—1935	197,568	.....
Total—1929	121,513	.....

* From Retail Census of Distribution for 1939, Bureau of the Census. A Filling Station is a place of business whose volume of sales of gasoline and oil amount to over 50 per cent of its total sales volume.

Independent Repair Shops by Size Based on Volume of Receipts*

22% of the Shops do 68% of the Business

Volume of Receipts includes sales of parts and accessories, gasoline and oil and service labor.

Groupings According to Volume of Receipts	No. of Shops	% of U. S. Total	Volume of Receipts	% of U. S. Total
$20,000 or more	1,649	3.18	$63,311,000	27.74
$15,000 to $19,999	1,077	2.08	$18,350,000	8.04
$10,000 to $14,999	2,327	4.49	$27,991,000	12.27
$5,000 to $9,999	6,514	12.57	$45,141,000	19.78
$3,000 to $4,999	7,935	15.31	$30,514,000	13.37
$2,000 to $2,999	7,230	13.95	$17,486,000	7.66
$1,000 to $1,999	13,018	25.12	$18,547,000	8.13
Less than $1,000	12,077	23.30	$6,874,000	3.01
Total	51,827	100.00	$228,214,000	100.00

* From Census of Service Establishments for 1939, Bureau of the Census.

Independent Repair Shops by Size Based on Number of Employees*

60% of Shops are One Man Operated and they do 26% of the Business

	No. of Shops	% of U. S. Total	No. of Employees†	% of U. S. Total	Volume of Receipts‡	% of U. S. Total
20 employees or more	101	.19	3,391	7.90	$11,950,000	5.24
8 to 19 employees	613	1.18	6,744	15.71	24,331,000	10.66
6 or 7 employees	649	1.25	4,123	9.61	15,238,000	6.68
4 or 5 employees	1,377	2.66	5,934	13.83	22,238,000	9.74
3 employees	1,752	3.38	5,183	12.08	19,532,000	8.56
2 employees	3,675	7.10	7,221	16.82	28,354,000	12.42
1 employee or less	12,298	23.73	10,323	24.05	48,049,000	21.06
No employees	31,362	60.51	.....	.....	58,522,000	25.64
Total	51,827	100.00	42,919	100.00	$228,214,000	100.00

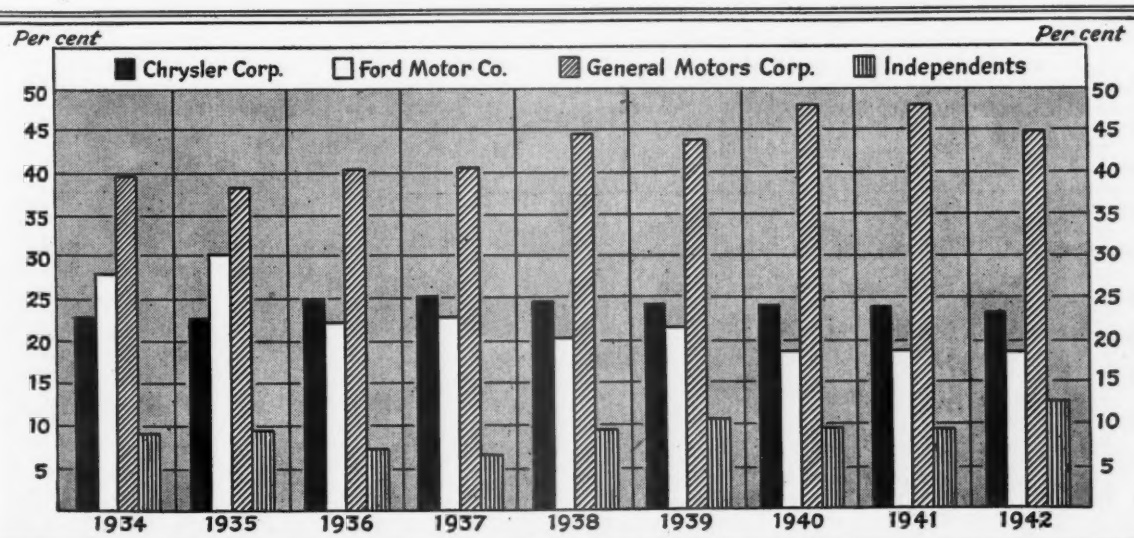
*—From Census of Service Establishment for 1939, Bureau of the Census.
†—Average for the year. Includes paid executives but not the number of proprietors of unincorporated businesses.
‡—Volume of Receipts includes sales of parts and accessories, gasoline and oil and service labor.

Number of Employees per New Motor-Vehicle Dealer*

State	No. of Outlets	No. of Employees ‡	Employees per Outlet	State	No. of Outlets	No. of Employees ‡	Employees per Outlet
Alabama	357	4,756	13.3	Nevada	53	501	9.4
Arizona	126	1,482	11.7	New Hampshire	199	1,511	7.6
Arkansas	335	3,501	10.4	New Jersey	842	9,179	10.9
California	1,766	22,730	12.9	New Mexico	155	1,646	10.6
Colorado	414	3,962	9.6	New York	2,311	22,896	9.9
Connecticut	441	4,583	10.4	North Carolina	647	7,479	11.5
Delaware	64	862	13.4	North Dakota	280	1,818	6.5
District of Columbia	68	2,372	34.9	Ohio	2,097	17,684	8.4
Florida	439	5,704	13.0	Oklahoma	639	6,269	9.8
Georgia	535	5,837	10.9	Oregon	356	3,969	11.1
Idaho	234	2,079	8.9	Pennsylvania	2,455	21,468	8.7
Illinois	2,092	19,133	9.1	Rhode Island	145	1,396	9.6
Indiana	1,165	9,448	8.5	South Carolina	342	3,450	10.0
Iowa	1,224	7,280	6.5	South Dakota	300	1,611	5.4
Kansas	838	5,508	6.6	Tennessee	426	5,050	11.8
Kentucky	529	4,938	9.3	Texas	1,672	18,182	10.9
Louisiana	331	4,684	14.1	Utah	163	1,623	9.9
Maine	304	2,314	7.6	Vermont	155	1,357	8.7
Maryland	376	4,574	12.1	Virginia	589	6,607	11.2
Massachusetts	941	9,683	10.2	Washington	536	5,561	10.4
Michigan	1,493	13,694	9.2	West Virginia	414	3,760	9.1
Minnesota	1,124	7,586	6.7	Wisconsin	1,329	7,795	5.9
Mississippi	349	3,342	9.6	Wyoming	164	1,231	7.5
Missouri	970	8,748	9.0				
Montana	275	2,128	7.7				
Nebraska	550	3,731	6.8	Total	33,609	316,702	9.4†

†—Average employees per dealer in U. S. *—From Retail Census of Distribution. 1939—Bureau of the Census.
‡—Average for the year and does not include the proprietors of incorporated businesses.

NEW CAR REGISTRATIONS BY MANUFACTURING GROUPS



Automotive Sales Outlets by States*

Wholesale and Retail Outlets Show Marked Gains in December over January, 1946.

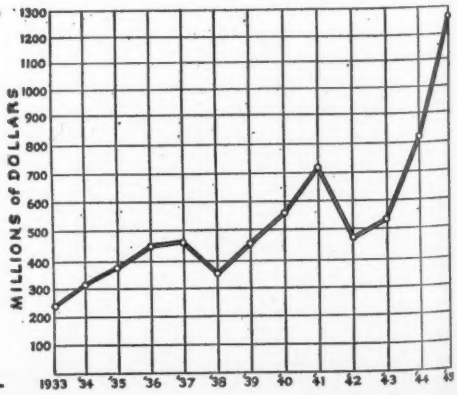
	Wholesalers			Car and Truck Dealers			Independent Repair Shops		
	December 1946	January 1946	January 1941	December 1946	January 1946	January 1941	December 1946	January 1946	January 1941
Alabama	114	88	84	453	370	407	340	298	283
Arizona	54	40	32	160	124	184	153	130	168
Arkansas	98	88	87	391	319	393	371	314	319
California	593	536	525	1,807	1,546	2,043	4,471	4,038	5,311
Colorado	96	81	73	449	373	489	702	601	486
Connecticut	103	95	103	492	454	623	634	570	694
Delaware	16	14	14	64	55	74	109	94	102
Dist. of Columbia	22	20	26	69	64	89	144	127	139
Florida	135	123	110	462	386	506	462	432	495
Georgia	131	106	103	584	510	578	322	295	290
Idaho	60	46	32	306	266	361	259	221	181
Illinois	418	400	414	2,066	1,915	2,575	2,833	2,544	2,929
Indiana	206	195	208	1,013	989	1,262	1,154	1,243	1,253
Iowa	193	174	169	1,164	1,100	1,544	1,095	990	1,288
Kansas	144	137	137	733	646	1,099	676	612	932
Kentucky	113	102	105	607	553	622	446	414	456
Louisiana	84	75	75	361	344	395	310	297	282
Maine	45	47	49	344	334	411	481	487	466
Maryland	77	71	84	411	394	490	454	415	520
Massachusetts	209	195	234	993	938	1,154	1,247	1,086	1,238
Michigan	294	268	245	1,586	1,456	1,863	2,237	2,453	1,851
Minnesota	142	134	127	1,370	1,129	1,480	1,457	1,309	1,767
Mississippi	82	73	70	435	354	431	203	191	192
Missouri	224	216	208	974	800	1,099	1,205	1,033	1,468
Montana	51	47	47	359	325	415	262	243	269
Nebraska	105	96	96	564	532	745	589	558	805
Nevada	14	12	10	82	77	115	97	70	94
New Hampshire	28	27	25	195	195	246	205	188	271
New Jersey	195	174	192	949	882	1,102	1,688	1,558	1,837
New Mexico	52	47	32	173	159	189	173	160	140
New York	501	490	541	2,459	2,295	2,938	4,520	4,291	5,230
North Carolina	169	145	130	764	654	689	632	488	497
North Dakota	41	34	30	394	386	551	441	387	482
Ohio	407	364	379	1,821	1,684	2,344	2,396	1,892	2,448
Oklahoma	158	139	134	685	571	744	903	711	780
Oregon	113	98	83	468	387	477	958	857	890
Pennsylvania	483	431	436	2,633	2,591	3,188	4,172	3,683	3,976
Rhode Island	31	29	29	128	126	160	160	139	229
South Carolina	70	55	57	385	333	378	242	229	232
South Dakota	36	36	32	284	313	439	308	278	335
Tennessee	118	109	108	445	411	484	404	359	391
Texas	430	400	362	1,644	1,635	2,069	2,494	2,396	2,658
Utah	59	53	42	165	173	204	291	258	228
Vermont	20	21	27	169	157	194	238	225	331
Virginia	104	91	86	651	650	715	700	677	687
Washington	151	138	135	687	598	780	1,469	1,341	1,271
West Virginia	79	72	80	431	396	530	320	284	363
Wisconsin	170	154	144	1,340	1,331	1,702	1,269	1,122	1,520
Wyoming	32	26	24	170	164	220	128	114	134
Total	7,270	6,612	6,575	35,339	32,439	41,790	46,824	42,702	49,208

*—Trade List Department, Chilton Company.

Dollar Volume at Wholesale Value of Repair Parts and Accessories Production

(Estimates Based on U. S. Excise Tax Receipts)

Year	Wholesale Value	Year	Wholesale Value
1933	$234,461,000	1940	$553,004,000
1934	304,642,000	1941	718,212,000
1935	378,323,000	1942	471,957,000
1936	448,527,000	1943	527,710,000
1937	464,619,000	1944	816,724,000
1938	348,068,000	1945	1,284,926,000
1939	454,673,000	1946	1.500,000,000



Estimated Parts Sales

State	Volume of Parts, Accessories and Equipment at Wholesale Prices by States*
Alabama	$14,889,833
Arizona	6,039,608
Arkansas	11,565,952
California	109,844,959
Colorado	14,630,710
Connecticut	19,845,355
Delaware	2,819,782
District of Columbia	4,733,899
Florida	22,075,859
Georgia	22,327,339
Idaho	6,348,351
Illinois	73,190,967
Indiana	41,345,155
Iowa	29,158,590
Kansas	25,589,226
Kentucky	18,321,148
Louisiana	17,071,604
Maine	8,625,266
Maryland	18,814,647
Massachusetts	36,370,672
Michigan	62,295,669
Minnesota	31,627,736
Mississippi	10,811,556
Missouri	36,075,062
Montana	6,625,253
Nebraska	17,196,563
Nevada	1,890,890
New Hampshire	5,008,309
New Jersey	42,981,694
New Mexico	4,982,507
New York	100,102,700
North Carolina	25,466,801
North Dakota	7,638,985
Ohio	79,569,555
Oklahoma	21,346,505
Oregon	17,499,985
Pennsylvania	86,395,031
Rhode Island	7,593,461
South Carolina	13,749,708
South Dakota	7,534,508
Tennessee	18,821,995
Texas	66,858,620
Utah	6,492,018
Vermont	3,905,853
Virginia	22,812,350
Washington	25,975,885
West Virginia	11,173,467
Wisconsin	35,333,883
Wyoming	3,550,529
Total	$1,284,926,000

*—Estimated on basis of average sales volume per vehicle multiplied by number of vehicles in each state.

New Motor-Vehicle Dealers by Size of City*

Only 36% of New Motor-Vehicle Dealers are in Towns of 10,000 Population and Over, but they do 65% of the Total U. S. Volume

Size of City	No. of Outlets	Per Cent of U. S. Total	Sales Volume	Per Cent of U. S. Total
500,000 or more	1,791	5.33	$697,772,000	14.51
250,000 to 499,999	855	2.54	397,905,000	8.27
100,000 to 249,999	1,085	3.23	413,612,000	8.60
75,000 to 99,999	478	1.42	159,835,000	3.32
50,000 to 74,999	914	2.72	277,686,000	5.77
30,000 to 49,999	1,553	4.62	350,012,000	7.28
20,000 to 29,999	1,432	4.26	275,320,000	5.72
10,000 to 19,999	3,858	11,48	567,273,000	11.79
5,000 to 9,999	4,563	13.58	505,593,000	10.51
2,500 to 4,999	4,573	13.61	406,004,000	8.44
Under 2500	12,507	37.21	759,233,000	15.79
Totals	33,609	100.00	$4,810,245,000	100.00

*—Census of Distribution, 1939. Bureau of the Census.

Farm and Industrial Production*

(Does Not Include Garden Tractors)

Year	Wheel Type	Tracklaying Type	Total	Year	Wheel Type	Tracklaying Type	Total
1937	237,837	34,602	272,439	1941	313,432	28,661	342,093
1938	172,437	16,837	189,274	1942	172,123	29,578	201,701
1939	158,585	20,127	205,685	1943	105,248	29,453	134,701
1940	249,434	24,762	274,196	1944	249,131	44,860	293,991
				1945	244,430	44,872	289,302

*—Bureau of the Census.

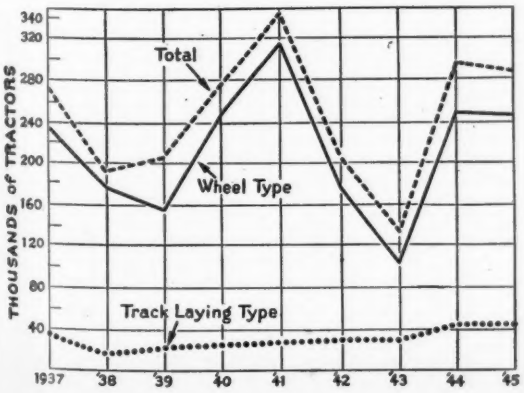
Automotive Wholesalers, Dealers and Repair Shops*

(As of January of Each Year)

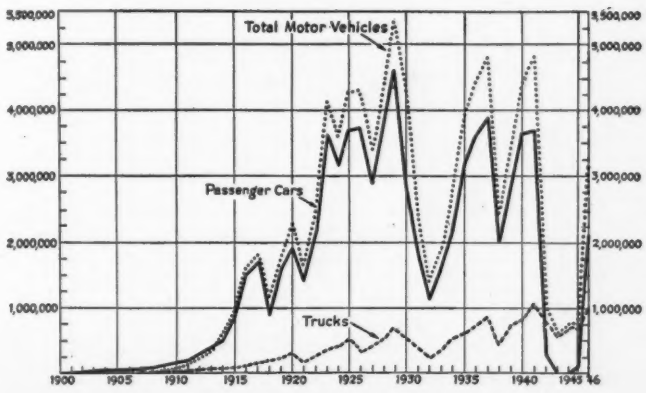
	Wholesalers	Passenger Car Dealers	Car and Truck Dealers	Independent Repair Shops	All Retail Outlets
1928	3,796	.....	.....	37,615	105,338
1929	3,912	50,984	.....	43,863	111,329
1930	4,028	51,560	.....	47,882	117,493
1931	4,668	47,144	48,658	53,898	118,713
1932	5,051	42,881	43,708	58,045	108,147
1933	5,337	38,003	39,370	59,547	103,113
1934	5,430	34,069	35,265	65,064	102,456
1935	5,757	35,977	37,238	64,518	105,991
1936	5,905	39,769	41,201	60,574	105,579
1937	5,874	41,288	43,461	56,423	102,808
1938	5,934	43,747	46,224	51,709	101,053
1939	6,019	39,936	41,992	50,406	95,418
1940	6,176	39,258	41,870	49,091	93,764
1941	6,575	39,833	41,790	49,208	95,296
1942	6,631	38,748	40,537	47,552	93,022
1943	6,130	32,470	34,270	43,540	80,863
1944	6,101	31,200	33,000	42,166	78,550
1945	6,217	30,110	31,930	41,193	78,498
1946	6,612	30,709	32,439	42,702	81,638
1946 (Dec. 1)	7,270	.....	35,339	46,824	91,074

*—Trade List Department—Chilton Company.

Total Tractor Production



Total Motor Vehicle Production

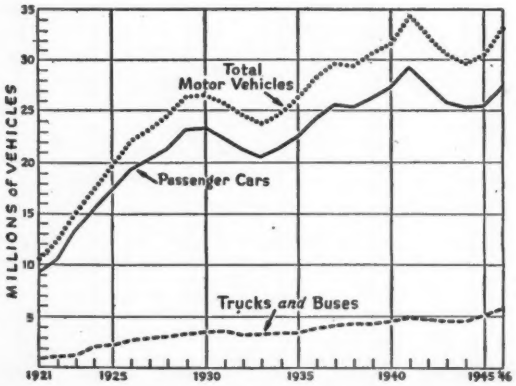


Forecast of 1946 Motor Vehicle Registrations

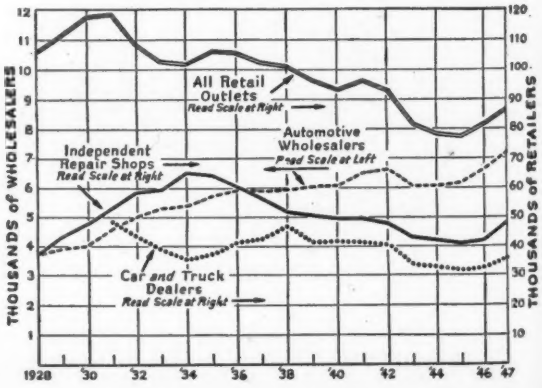
State	Passenger Cars[1] 1946	Passenger Cars[1] 1945	Trucks 1946	Trucks 1945	Buses 1946	Buses 1945	Total Motor Vehicles 1946	Total Motor Vehicles 1945	Per Cent Increase
Alabama	296,604	278,493	86,441	72,141	1,823	1,955	384,868	352,589	9.0
Arizona	118,165	112,855	29,400	29,462	520[1]	700[1]	148,085	143,017	3.4
Arkansas	222,000	193,875	110,617	78,902	1,500	1,103	334,117	273,880	22.1
California	2,469,790	2,238,613	387,244	355,282	6,290	6,033	2,863,324[4]	2,599,928[4]	10.2
Colorado	299,350	269,616	89,200	76,837	[2]	[2]	388,550	346,453	12.1
Connecticut	430,661	409,710	65,094	58,861	2,267	1,364	498,022	469,935	6.0
Delaware	56,000	53,610	14,500	13,162	[2]	[2]	70,500	66,772	5.8
District of Columbia	102,294	96,087	13,818	13,879	2,100	2,132	118,212	112,098	5.3
Florida	470,000	423,158	116,000	96,384	3,800	3,211	589,800	522,753	12.8
Georgia	443,214	419,290	124,222	104,650	4,715	4,768	572,151	528,708	8.2
Idaho	120,000	111,770	43,000	38,352	250	206	163,250	150,328	8.8
Illinois	1,680,000	1,508,222	262,000	224,929	[2]	[2]	1,942,000	1,733,151	12.1
Indiana	852,500	833,908	176,800	137,809	7,464	7,330	1,036,764	979,047	6.0
Iowa	626,828	588,295	118,787	102,176	[2]	[2]	745,615	690,471	8.0
Kansas	512,680	476,596	140,237	129,353	[2]	[2]	652,917	605,949	8.0
Kentucky	370,000	351,825	94,000	82,017	.....	.....	464,000	433,842	7.0
Louisiana	317,200	322,749	93,600	78,256	3,300	3,248	414,100	404,253	2.3
Maine	168,125	153,861	55,000	49,891	450	493	223,575	204,245	9.5
Maryland	422,564	379,220	75,395	65,090	1,800	1,218	499,759	445,528	12.1
Massachusetts	832,500	744,364	130,000	111,417	5,780	5,471	68,280	861,252	12.3
Michigan	1,371,055	1,307,475	146,526	123,406	[2]	[2]	1,517,581	1,430,881	5.9
Minnesota	667,000	632,659	130,000	115,906	410	375	797,410	748,940	6.6
Mississippi	195,000	184,321	77,500	68,988	3,000	2,707	275,500	256,016	7.3
Missouri	760,000	697,168	174,000	157,084	.....	.....	934,000	854,252	9.2
Montana	119,800	108,625	53,300	48,260	[2]	[2]	173,100	156,885	10.3
Nebraska	336,000	331,076	82,000	75,554	675	582	418,675	407,212	2.9
Nevada	38,717	35,583	10,778	9,193	[2]	[2]	49,495	44,776	10.7
New Hampshire	106,500	95,113	36,200	23,483	[2]	[2]	142,700	118,596	20.4
New Jersey	936,055	860,000	164,820	149,000	10,474[1]	8,800	1,111,349	1,017,800	9.5
New Mexico	95,000	86,823	33,000	29,640	.....	1,522	128,000	117,985	8.8
New York	2,200,000	1,983,693	384,000	354,052	35,000	31,486[1]	2,619,000	2,369,231	10.5
North Carolina	550,715	502,700	129,162	97,500	8,000	2,850	687,877	603,050	14.0
North Dakota	139,427	131,468	53,958	49,262	164	160	193,549	180,890	7.0
Ohio	1,766,000	1,684,390	228,000	196,810	3,400	2,995	1,997,400	1,884,195	6.0
Oklahoma	420,000	391,085	125,000	109,896	4,500[1]	4,501[1]	549,500	505,482	8.9
Oregon	360,000	330,771	98,881	82,408	1,545	1,218	460,426	414,397	11.1
Pennsylvania	1,865,784	1,731,430	337,699	304,972	10,162	8,993	2,213,645	2,045,395	8.1
Rhode Island	164,300	156,490	26,500	22,607	695	715	191,495	179,812	6.7
South Carolina	295,000	275,410	63,700	48,047	2,750	2,134	361,450	325,591	11.0
South Dakota	148,000	141,065	41,300	37,149	240	202	189,540	178,416	6.1
Tennessee	421,200	368,568	92,000	77,134	[3]	[3]	513,200	445,702	15.1
Texas	1,440,000	1,273,759	365,000	307,455	2,200	1,988	1,807,200	1,583,202	14.0
Utah	137,268	126,740	30,420	26,748	338	242	168,026	153,730	9.4
Vermont	86,000	80,666	13,200	11,667	168	157	99,368	92,490	7.3
Virginia	500,800	443,239	118,000	94,286	2,500	2,668	621,300	540,193	15.0
Washington	520,000	509,140	117,000	103,762	2,500	2,203	639,500	615,105	4.0
West Virginia	240,000	208,035	65,000	55,512	1,500	1,039	306,500	264,586	16.0
Wisconsin	740,000	692,575	154,450	142,240	1,850	1,886	896,300	836,701	7.0
Wyoming	66,000	62,640	27,000	21,436	.....	.....	93,000	84,076	10.5
Total	27,496,096	25,398,824	5,603,749	4,862,307	134,130	118,655	33,233,975	30,379,786	9.6

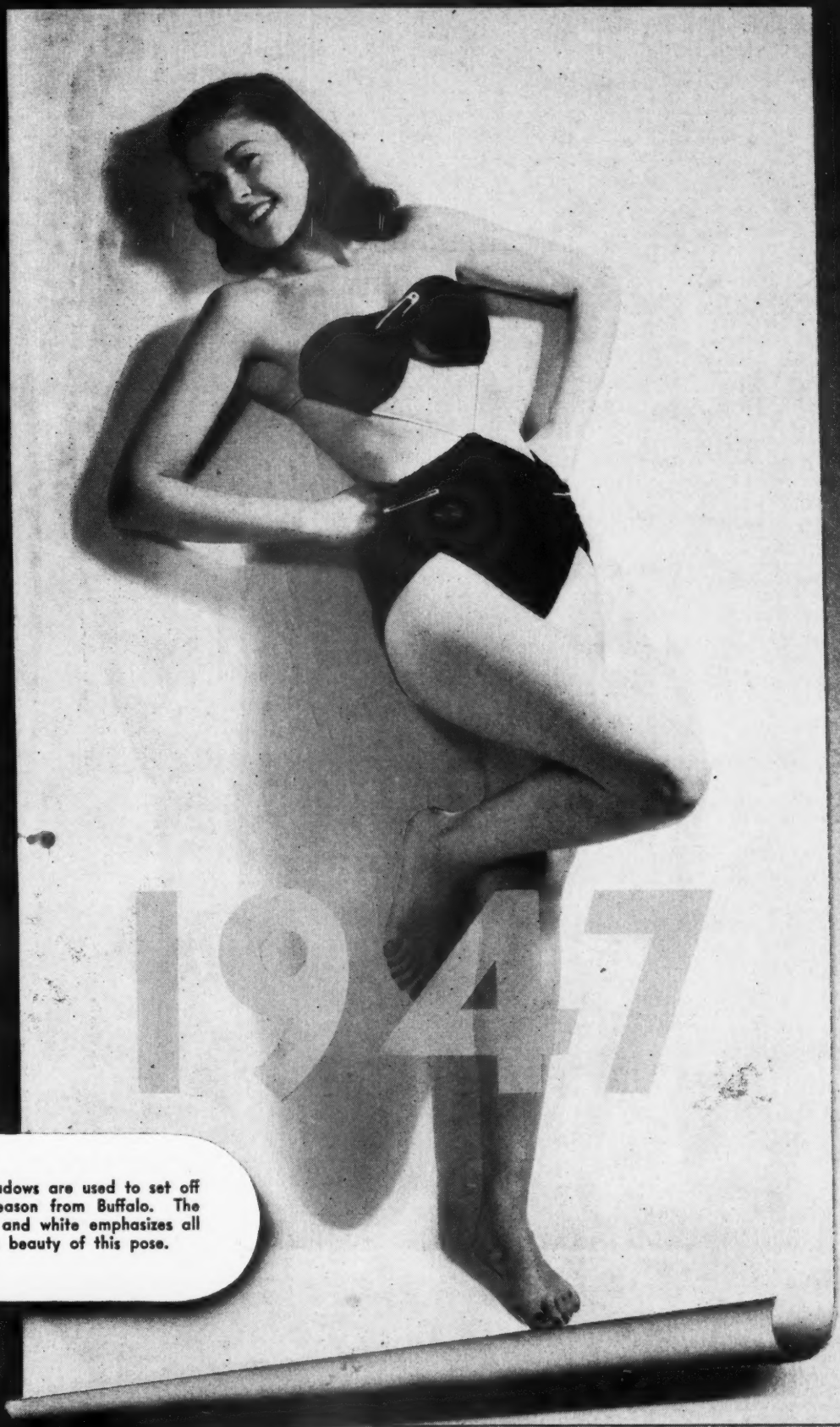
[1] Includes taxicabs.
[2] Included with trucks.
[3] Included with passenger cars.
[4] Does not include 128,415 vehicles originally registered in other states during 1945 and 130,000 in 1946.

Total Motor Vehicle Registration



Automotive Retail Outlets





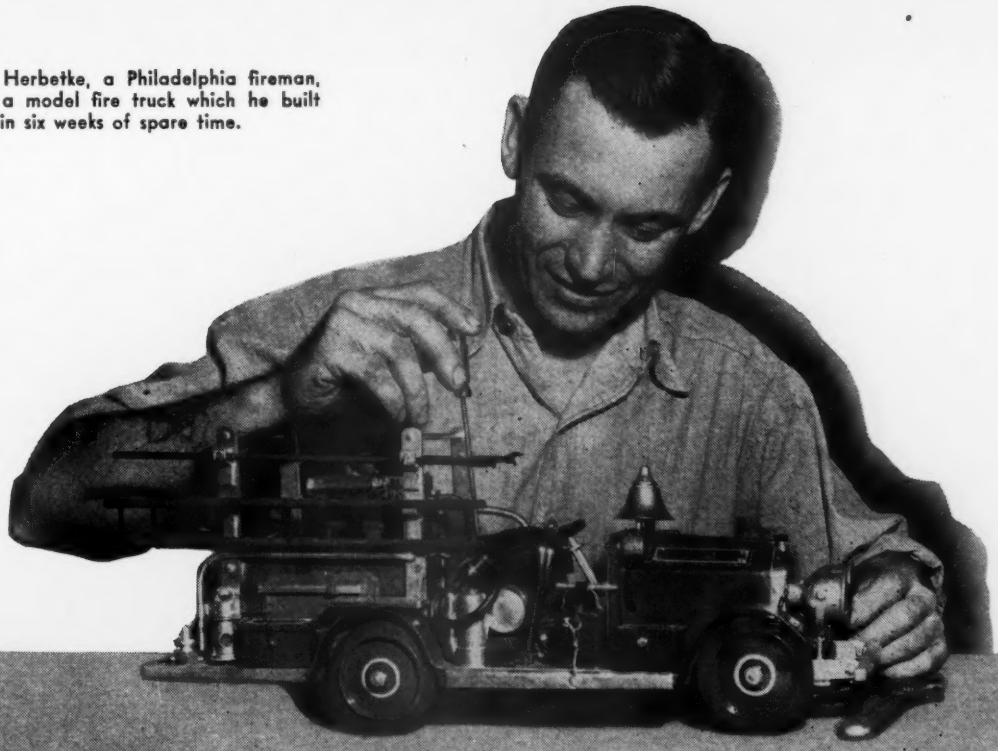
Lights and shadows are used to set off Mary Lou Gleason from Buffalo. The play of black and white emphasizes all the pin-up beauty of this pose.

MOTOR AGE PICTURE GALLERY

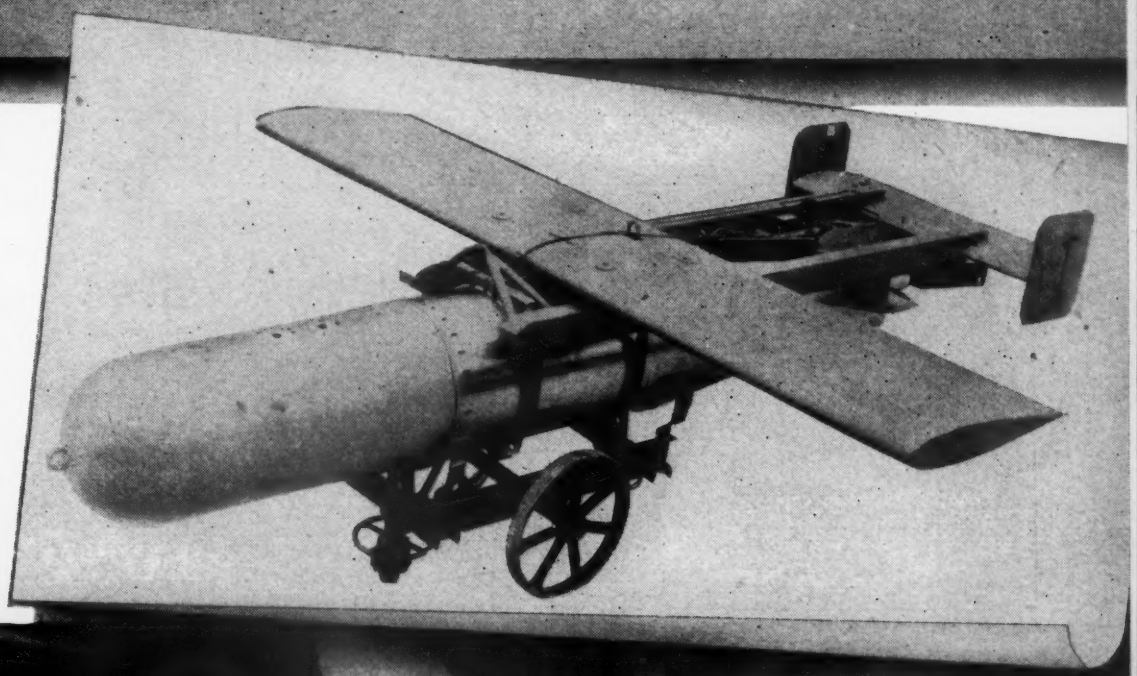
One of the ancient automobiles that roared and banged its way down Biscayne Blvd. to inaugurate Miami's Golden Jubilee Exposition. The passengers dressed in Gay Nineties costumes.

Bathing suits next? Hollywood has finally begun to use glass fabric for dress goods.

This Italian vehicle, only three and one-half feet high, can carry up to one and a half tons. The 125 cc engine is said to give 65 miles per gallon and a speed of 30 mph.



Stephen Herbetke, a Philadelphia fireman, displays a model fire truck which he built in six weeks of spare time.



One of the glider torpedoes used against Japanese shipping during the war. It was carried by B-17s or B-25s and released outside AA range. The tail surfaces are gyro controlled and a special apparatus releases the torpedo from the airframe.

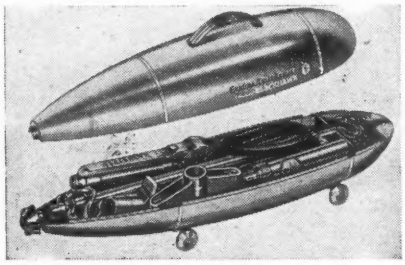
A pretty Ryan worker displays a new lightweight muffler which assertedly eliminates 90 per cent of the airplane engine's noise and heats the cabin.

FRANK
THE FIXER
STORY BY J.E. FORD
DRAWN BY A.L. CASSEL
OH DARN IT! THERE IT GOES AGAIN. EVERY TIME I REACH FOR THAT PEN, IT MOVES!
YOU'RE ONLY IMAGINING THINGS, SIS.
I'M DOING NOTHING OF THE KIND. THERE'S SOMETHING QUEER GOING ON AROUND HERE
I THINK I KNOW WHAT IT IS. HEY HAP! COME OUT OF IT
SO... IT'S YOU!
SORRY. I DIDN'T MEAN TO SCARE YOU
HAP, YOU SURE ARE A CARD
A LITTLE OF THAT STUFF IS OKAY, BUT YOU'RE PULLING IT TOO MUCH
OH LET HIM BE WE NEED A FEW LAUGHS AROUND THIS PLACE
JUST KEEP YOUR TRICKS TILL AFTER WORK.
OKAY!
12 O'CLOCK! IT'S AFTER WORK NOW. LET'S TRY THE WAGON FOR LUNCH TODAY.
FRANK AND WHITEY
THREE ROAST BEEFS
ARE YA ORDERIN' FOR ALL THREE OF YEZ OR JUST FOR YOU? 'N' WE ONLY GOT STEW.
WHITEY MEANT STEW
FRANK AND WHITEY
HEY! WHAT'S HAPPENED TO THE GUY IN THE MIDDLE?
HE HAD TO GO.
NO I DIDN'T I'M RIGHT HERE.
I TOLD YOU TO CUT THAT OUT!
HE'S OBEYING ORDERS. YOU TOLD HIM TO KEEP IT TILL AFTER WORK
ARE YOU GUYS SURE YOU AIN'T GOT A MAN IN A WHITE COAT WITH YOU?
IT'S ONLY A TRICK HAP DOES. I GET A LAUGH EVERY TIME HE DOES IT.
WELL JUST SO LONG AS YOU PAY..... HEY! HE'S GONE AGAIN
IS THAT A LAUGH?! I'M ABOUT READY TO PASS OUT.
YOU AIN'T PASSIN' NO PLACE, BROTHER TILL YOU PAY FOR THAT NOW-YOU-SEE-HIM-AND-NOW-YOU-DON'T GUY
FUNNY, ISN'T IT?
YOU'RE RIGHT FRANK, PEOPLE DO GET TIRED OF THE SAME GAG ALL OF THE TIME, DON'T THEY?

NEW
products

Blackhawk Bantam

An 84-lb. body tool unit that is stated to perform 90% of all body jobs, has been brought out by the Blackhawk Mfg. Co., Milwaukee 1,



Wis. Called the Bantam Porto-Power, it is a streamlined tool and carrier, combination that resembles a torpedo in appearance, with a lock that suggeste fins. Among the tools included are a new pulling attachment and a new coupler that permit rapid ram detachment and replacement with a hydraulic wedge.

Auto-Lite's New Spark Plugs for Marine Use

Two new type spark plugs especially suited to marine use will be placed on the market early in 1947 by The Electric Auto-Lite Company, according to F. A. Nealon, Sales Manager of the Merchandising Division.

A new series of "Transport Plugs" especially designed for long life and arduous service, and featuring alumina insulators and oversize electrodes will be available in 14 M.M., 18 M.M. and 7/8 in.-18 thread sizes.

The second series is a line of shielded automotive plugs which in combination with a newly developed synthetic rubber grommet connector will enable the boat owner to have a water and explosion proof spark plug set-up. Actual operation with the plugs under water is possible.

Perfect Circle Manulathe

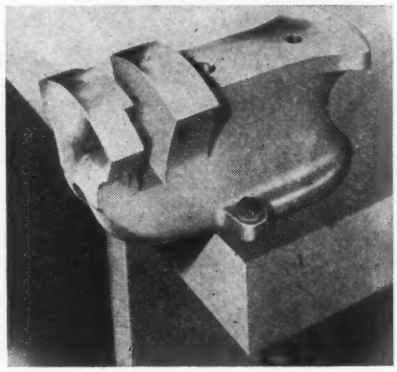
The Perfect Circle Manulathe is designed to salvage pistons (sizes 2½ in. to 4¼ in. diameter, inclusive) with badly worn top grooves without the use of a power lathe.The groove cut by the Manulathe is the correct width to accommodate the standard width ring and the .024 in. steel spacer which is installed above the ring. Extra cutters are provided which will cut the groove to the next 1/32 in. width to cover the cases where this is necessary.

In operation, the Manulathe is positioned on the piston by three pilot pins, which are free to ride in the second ring groove and contact both lands of that groove. After the cutting tool is adjusted for cutting the top groove, the Manulathe is revolved about the piston by means of a removable handle. Each revolution of the handle, as the body of the tool revolves, feeds the cutting tool .003 in. into the groove. When the tool reaches the bottom of the groove the handle is removed. The Manulathe is then given an extra turn or two to allow the cutter to clean up the bottom of the groove without cutting deeper into the piston. The dealer net price is $63.50. Made by the Perfect Circle Co., Hagerstown, Ind.

Barrett's Brake Line

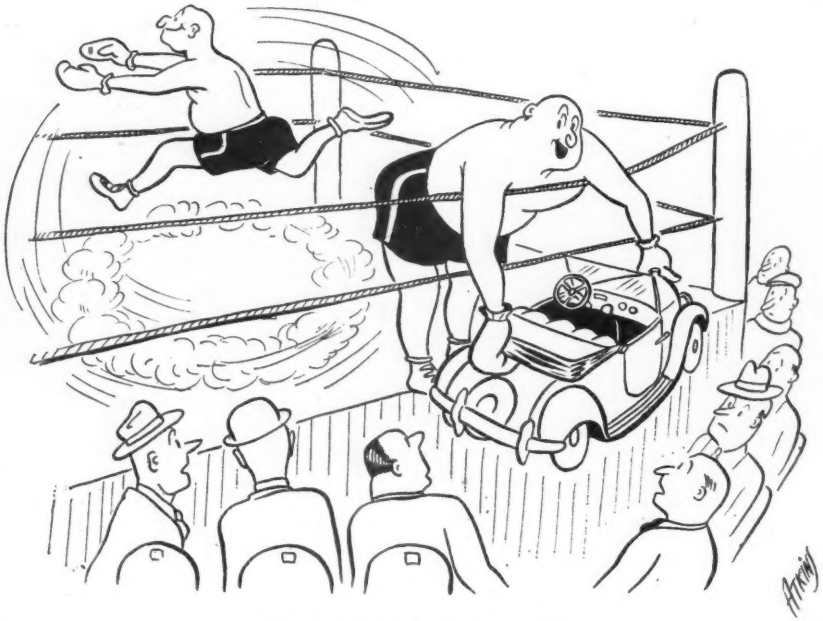
The Barrett Equipment Co., of St. Louis, has developed a series of brake servicing units, ranging from filler and gasket cement to an hydraulic filler tank.

Featured is the hydraulic filler tank that bleeds and fills the brake system under controlled air pressure. It is equipped with pressure gage safety valve, hose, and holds



over 2½ gallons. Also produced is a wheel track for brake drum lathe work, on which the lathe may be locked and transported to the job. While the lathe is in use, the track lies flat with wheels and handles off the floor thus making a solid working platform. Anvils, gages, and compounds are also part of the current Barrett line.

Cutter kits for all brake drum lathes are also offered by the Barrett Equipment Company. Made of cast aluminum, they are designed to protect cutting tools that are not in use. It contains 8 carbide cutters ground for cast iron drums, 2 carbide cutters ground for steel drums, 1 high-speed cutter for all-purpose use, 1 hone stick for removing fused metal for cutting tools after they have been used.



"So he's on a bicycle is he?"

NEW PRODUCTS

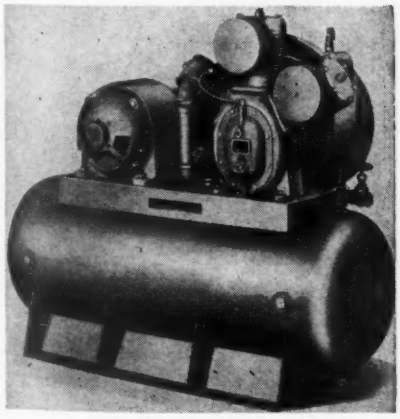
Tireweld Vulcanizer

A product of the Allied Automotive Corporation, 1729 Ford Building, Detroit 26, Michigan, the Tireweld Vulcanizer is a patented all electric, fully automatic, low voltage unit operating on 110 volt A. C., 25 or 60 cycle or direct current. The Tireweld repairs tubes, the maker declares, not by patching but by making a repair of live rubber which is a cohesive part of the original tube.

The heating unit is a Chromalux element embedded in a special type metal plate, to insure even distribution of heat. A Marktime switch is built into the unit to give automatic timing for all Vulcanizing operations. This unit is marketed at $75.00.

Ingersoll-Rand Adds New Compressor to Line

The Model 15T, 15 hp compressor has been added to the Type 30 line of Ingersoll-Rand Compressors. This unit is a 3-cylinder, 2-stage air-cooled compressor suitable for working pressures ranging from 80 to 200 pounds for heavy-duty work and up to 250 pounds on intermittent service. The centrifugal unloader is totally enclosed in the crankcase to unload all three cylinders when the compressor stops, thus protecting the motor by preventing starting against load. A



shim-adjusted centrifugal pilot valve is used so that the unloader may be easily adjusted. Ingersoll-Rand, 11 Broadway, New York 4, N. Y.

Hastings Bench

The Hastings Piston Peening and Corrector Bench has been designed by Hastings engineers to incorporate all the equipment necessary for complete piston and ring work in one compact unit.

The bench includes a motor for the piston lathe and a specially designed high-output compressor with motor.

The corrector lathe widens or deepens any or all ring grooves on centered or centerless pistons, and used in conjunction with regrooved spacers, is adapted to correcting worn top grooves.

The Piston Peening unit which is furnished complete with all necessary tools, dial indicators, holding blocks, and so forth is said to enable an inexperienced shop man to quickly and accurately resize any piston. The Hastings Manufacturing Company, Hastings, Michigan.

Aluminum Water Pump

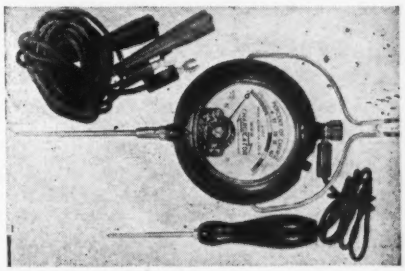
Aluminum Industries, Inc., Cincinnati 25, Ohio, makers of Permite Automotive Replacement Parts have announced the development of an aluminum water pump and a rubber spring shackle.

The water pumps are exact duplicates of the manufacturer's original part, but possess the advantage of rust proof aluminum construction throughout. They are at present available for Chevrolet, 1937-46. Pumps for other makes will be available in the near future.

The Permite rubber spring shackles require no lubrication, eliminate shackle noise. Advantages claimed include easy installation, fewer component parts, interchangeability of shackles.

Hickok Chargicator

The newly developed Hickok Chargicator indicates electrically the equivalent gravity of any lead-acid storage battery, regardless of size or voltage. Permitting the battery to be checked without being disturbed, the Chargicator is designed to permit supersensitive measurements, whether it is permanently connected to the battery or used as a portable tester. It shows what charging rate to use, either for trickle charging or for a high-rate charge. It indicates the percentage of charge and charg-



ing danger and warns of destructive overcharging.

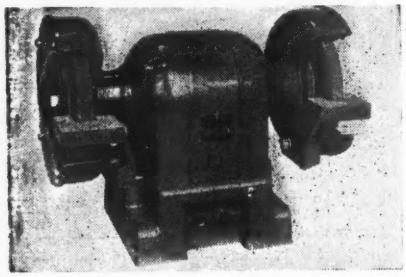
Weak or defective cells are spotted before actual failure occurs, the manufacturer declares and it may also be used as a check against future failure by using it in conjunction with a load test. All models are sealed within molded acid-proof bakelite cases and are not affected by weather or temperature. Hickok Electrical Instrument Company, 10564 Dupont Avenue, Cleveland 8, Ohio.

Graco Center Luber

Graco is featuring three new units of equipment, the Center Luber, Oil Bar and a service merchandiser, all designed to stress efficiency and eye appeal. The Center Luber, a self-controlled lubrication department, can service two cars at the same time. It is finished in white baked enamel and chrome trim. The Gray Company, Graco Square, Minneapolis 13, Minnesota.

Black and Decker Heavy Duty Grinder

Black and Decker Mfg. Co., of Baltimore is featuring a 6 in. heavy duty bench grinder. This new grinder is light in weight,



made of die-cast zinc, and accommodates a standard 3-secton wire wheel brush without changing the guard. U-shaped tool rests fit around the wheels and are adjustable for wheel wear. It is equipped with two 6-in. grinding wheels, one medium, one fine.

Lempco Improved Crankshaft Grinder

Among the features of the new Lempco improved crankshaft grinder, are: throwhead chucks mounted on newly designed indexed backplates permitting rotation of the crankshaft whether 2, 3 or 4 plane from one crankpin to another without loosening the crankshaft in the chuck; rapid traverse infeed and retraction of the grinding wheel; a newly designed steady rest which attaches to the wheelhead carriage by a half turn cam lock; newly designed crankshaft centralizing Micrometer fixture.

This model, the NKG Crankshaft Regrinder is a product of Lempco Products, Inc., 5490 Dunham Road, Bedford, Ohio.

Bowers Battery Features Several Products

New products by Bowers Battery and Spark Plug Co., of Reading, Pa., include a battery charger, a battery cell tester, an ignition cable set, a trickle charger and flashlight batteries.

The battery charger is stated to fully recharge, overnight, a battery that is in good condition, charging at a six ampere rate, automatically tapering off near the end of charge to four amperes.

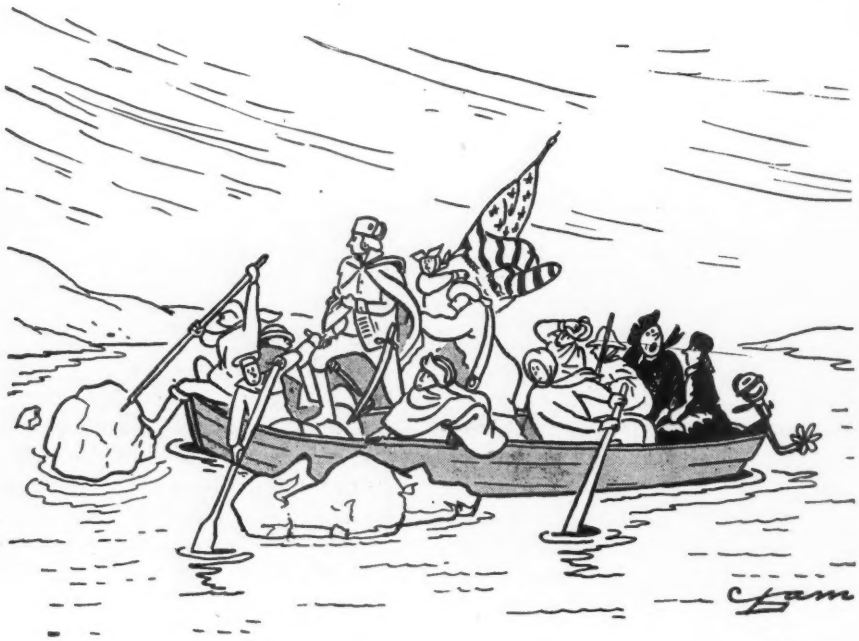
Operating on 110-120 V AC, through the use of a heavy-duty Selenium rectifier, this charger employs an automatic circuit breaker that eliminates a fuse and that automatically registers "danger" if the wrong leads are attached. Weighing six pounds, it is 4½ in. wide, 7⅝ in. high.

Willard Fast Charger And Tester

A fast charger with built-in tester has been introduced by the Willard Storage Battery Co., Cleveland, Ohio. The feature of this charger is the automatic thermostatic control to safeguard the battery being charged. A four-range scale, built into the device provides automatic compensation for battery size and temperature, assuring accurate results. A copper oxide rectifier is used, and all parts of unusually rugged construction.

Ramco Rings

The new Ramco 10-Up piston rings feature improvements in manufacturing techniques and design to insure finer performance. Developments included in these rings are the 10-Up multiple tension principle, the inter-slot oil control feature, oil flushing inner ring and the Spiro-Seal helical ring which is used in the same piston groove below the cast iron ring. These rings are backed by a 10,000 mile ring and labor warranty. The Ramsey Corporation, 3704 Forest Park Blvd., St. Louis, Mo.



"We'd make better time if we'd use the motor, but the boss says the British might hear!"

NEW PRODUCTS

Grote Reflectors

Featuring lenses molded from red Plexiglass, the transparent acrylic plastic manufactured by the Rohm & Haas Company, Philadelphia, a new flare of the reflector type for use by disabled trucks, is being offered by the Grote Manufacturing Company, Bellevue, Kentucky. The flares are equipped with "Grotelite" reflectors and meet the requirements of the Interstate Commerce Commission regulations.

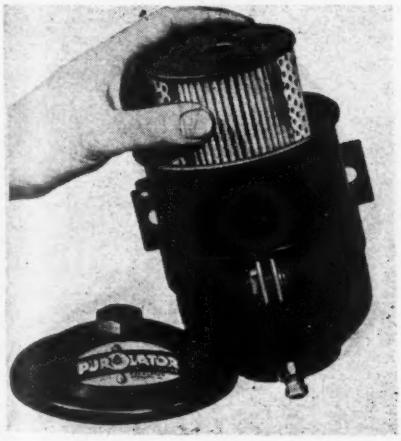
The complete set consists of three flares, each flare having four plastic lenses injection molded from Red Plexiglas molding powder. The flares are set up in roadways to warn oncoming motorists of a truck's breakdown and approaching automobile headlights reflect a red warning signal from the lenses.

Each flare has a set of swivel type legs which can be adjusted for mounting in the road and also permits a compact arrangement in the carrier.

Purolator Oil Filter

Purolator Products, Inc. of Newark, N. J., are featuring their Micronic Oil Filter Element which filters oil through paper by means of a patented process in which the paper is treated to enable it to withstand the effect of lubricating oil at engine operating temperatures. The Micronic element is also waterproof.

According to the manufacturer, the Micronic Oil Filter Element is designed to provide three times the filtering area of pre-war "waste-



type" filters, yet it is no larger in size than its predecessors in the Purolator line because of a pleating arrangement of the plastic impregnated paper.

Chicago Pneumatic Tool

In addition to the Fender Iron which has been re-engineered, Chicago Pneumatic Tool Company of 6 East 44th Street, New York 17, N. Y., has introduced several products designed exclusively for automotive service.

A new line of air-operated Auto Impact Wrenches have been spe-

cially engineered for service shops and are designed to speed up all types of repair work involving nut applications or removal. The three models available offer various ranges of capacity up to 1¼ in.

The Pneudraulic Pump is designed to convert practically all types of Hydraulic Equipment such as Body and Frame Straightening Jacks, Hydraulic Presses, and so forth, to air power operation. Four other automatic service tools designed for use in conjunction with the Pneudraulic Pumps are: Hydraulic Cylinder Sleeve Pullers which exert a steady hydraulic pressure to remove or replace sleeves while the engine is either in or out of the chassis; the Hydraulic Valve Guide Puller for use on Ford and Lincoln engines, made to remove stuck or frozen valve guides; the power-operated Hydraulic Bolt and Cable Cutter is a compact unit for cutting operations in confined locations; the Hydraulic Tire Remover for removing trucks and bus tires is suitable for use in either a service car or in the repair shop.

Wilco Cross Sight

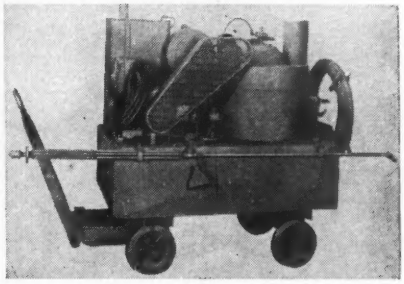
The Wilco Cross Sight wheel aliner consists of two posts, the bottom clamp to the front wheels and to the top of them are attached sights and gauges which check camber, caster, toe-in, toe-out-on-turns and king pin inclination. It is operated by clamping one post to each wheel, setting the head sighting device, into one post, and installing the chart on the other post. By sighting with the head across the top of the hood to the chart, wheel misalignment is detected. Wilco Products, Inc., 595 Valley Street, Orange, New Jersey.

Permite Rust-Stop

Aluminum Industries, Inc., of Cincinnati 25, Ohio, are now marketing Permite Rust-Stop, a rust and corrosion preventive for automotive cooling systems. According to the manufacturer, rust-stop prevents the formation of rust and other corrosion in water pump and cooling systems by forming a thin oil film that prevents water to metal contact. It loosens existing rust so that it can be flushed from the system and contains no acids. According to the manufacturer it is harmless to rubber, metal and paint, is non-poisonous and non-flammable. One 4 oz. can will protect all cooling systems up to 5 gallons capacity. The price is 50c per can.

Oakite-Vapor Cleaner

A multiple-duty steam cleaning unit known as the Oakite-Vapor Cleaning Unit, is now made by Oakite Products, Inc., 1240 Thames St., New York 6, N. Y. The self-contained, down-draft flame, oil-fired, enclosed coil-type steam gen-



erator delivers hot vaporized cleaning solutions under selective pressures up to 200 lbs. for the removal of grease, grit, grime, paint and other deposits from surfaces.

Starting from cold, 100 lbs. steam pressure can be generated in one minute; 200 lbs. in two minutes. A wide range of fuel oils such as No. 1, No. 2 or No. 3 fuel oil, kerosene or gasoline, may be used to operate the unit. Due to its flexibility of steam pressures, the unit may be used on many different types of light and heavy-duty cleaning.

Features of this unit according to the manufacturer are rapid steam generation, high solution tank capacity, effective operation of two steam guns simultaneously, wide flexibility in its application to various cleaning operations, safety against fire.

American Hammered Chrome Piston Rings

Originally developed for high-performance aircraft engines, porous-chrome piston rings are now offered by American Hammered Piston Ring.

The unit consists of a chrome ring in the top groove only, used in conjunction with the flexible power, flexible oil cutter and oil cutter rings.

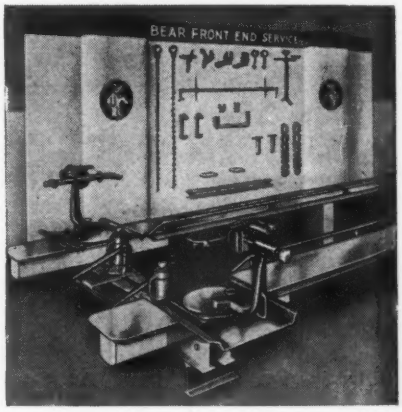
The principle involved is based on the use of hard, pure chromium, tiny pores in which serve as reservoirs for lubricating oil. The result, the makers claim, is to cause all of the rings to seat so rapidly that usual break-in wear is eliminated. They are now available for the entire truck and passengar car field. Koppers Co., Inc., Piston Ring Division, Baltimore 3, Md.

Lynn Alignment Tool

Lynn Products Co., Inc., 3 E. Ontario St., Chicago 11, Ill., are producing an alignment tool which is available in two lengths and three diameters. Designed to hold oilpans, radiator cores, fenders, and so forth in position while being secured, this tool resembles a screwdriver in shape and is inserted in the first hole aligned and screwed tight.

Bear Complete Unit For Front End Service

Bear has announced a complete front-end service unit, the 195-82. A basic alignment unit, it is so designed that complete frame straightening equipment can be



added at any time. As sold, the unit includes: No. 195 Bear Wheel Alining Machine; No. 20 Bear Toe-in Gauge; No. 50 Bear Wheel Tracking Gauge; No. 10 Bear Wheel Alining Gauge; No. 30 Bear Tire Scriber; No. 82 Bear Axle and Knee Correction Press. Bear Mfg. Co., Rock Island, Ill.

Neapco Service Instruction

A universal joint service instruction manual has been compiled by the New England Auto Products Corporation, Pottstown, Pa.

This manual, includes material on trouble shooting, removing propeller shafts, disassembling and inspecting universal joints,

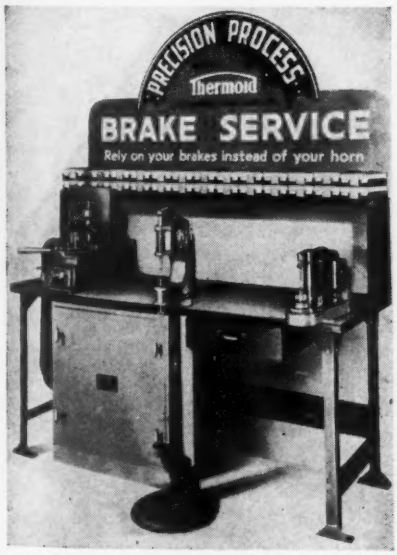
"Oh, I've been one for years."

installing universal joints and service instructions. The manual contains a reference chart for parts identification and outlines in detail the procedure to be followed for replacing the various makes and types of universal joints in general use. A table of passenger cars and trucks, indicating the types of joints used on each model, together with the applicable service instruction reference, is also included.

NEW PRODUCTS

Thermoid Brakes

The Thermoid Precision Processing Brake Service Department, a product of the Thermoid Company, Trenton 6, New Jersey, provides complete brake servicing equipment in one unit. Occupying a 3 x 6 ft. space, it provides each precision tool and each piece of equipment necessary to reline brakes. A steel bench with special heavy duty top and shelf mounts a Thermoid Standard Precision Burnisher "Red Top" Riveter, Model B Drilling and Countersinking Machine, and dust collector. The unit is painted in keeping with the principles of modern color dynamics.



A feature of Thermoid's new line is a heating unit for cementing brake linings to brake shoes. This unit, known as Thermo-Fuse, can bond 30 Chevrolet passenger car brake shoes at a time, the entire operation requiring 30 minutes. Thermo-Fuse is electrically operated and functions at a temperature of 375° F.

Sure Grip Spring Tool

Rinck-McIlwaine, Inc., of 16 Hudson Street, New York, are now producing Sure Grip Brake Spring Tool designed to grip any size and type of coil spring. This tool is said to be suitable for all brake springs whether attached to pins as in General Motors Cars or hooked into place as in Ford, Chrysler and others, both removes and replaces. Made of a ⅝ in. steel bar, 17 in. long and weighing 1½ pounds, the working parts are made of heat treated steel. While Sure Grip was created primarily for brake work, it is also useful in removing and installing clutch pedal springs.

Lamson Treasure Chest

Containing nine double-size drawers, the new Lamson Treasure Chest provides capacity for 20 per cent more products than the former Chest. This unit contains 118 Lamson 25 Line packages of the most popular fasteners, sizes used every day in automotive maintenance. The unused space is distributed throughout the various drawers of the Chest according to size and popularity of product.

Drawer fronts are clearly imprinted with product description and piece-by-piece resale prices. The total resale value of the contents is $76.24. Drawers can be subdivided and will accommodate "25" Line and standard packages. The Chest is made of 20 gauge furniture steel finished with maroon enamel baked on. Size of cabinet is 28 in. x 13 in. x 10 in. The Lamson & Sessions Co., Cleveland, Chicago and Birmingham.

Hyland Hone Set

The New Hyland Hone Set is made to service brake cylinders from ¾ in. to 2 in. This tool features Carborundum Stones in combination with special Fibre Blades for reconditioning of Hydraulic Wheel and Master Cylinders. The

operator is able to obtain four points of contact in honing and polishing while a universal joint permits positive alignment and positive adjustment enabling constant pressure to be used in cutting and honing. The construction also permits cleaning of the valve seat in blind master cylinders. Hyland Manufacturing Co., 816 John Street, Portsmouth, Ohio.

Imperial Brass Fittings

Improved brass fittings for tubing connection work, with forged bodies on elbows and tees and Dryseal pipe threads on pipe thread ends, have been introduced by the Imperial Brass Mfg. Co., of 1200 West Harrison Street, Chicago 7, Illinois.

The new forged fittings are

(*Continued on page* 118)

Don't Expect Atomic Power For Years

At a recent meeting in Detroit, Major-General Leslie Groves of Atom Bomb fame told a representative of this publication that utilization of atomic energy as a source of industrial and motive power is a long way off. Some time ago General Groves was quoted as saying that industrial power from atomic energy might be available in about 10 years. That prediction was based upon the same rate of activity as the scientific development leading to the key to fission of U-235. However, under civilian operation and without the drive of a war emergency he doubts whether the engineering problems concerned even with large stationary power installations will be solved in 10 years' time.

Consequently, it may be assumed that automotive applications visualized by the Sunday supplements are not in the picture for a long time, perhaps too far away for practical purposes.

Tide Water Oil to Sell Federal Tires

Through the signing this week of a contract, unique in the petroleum and automobile tire industries, it is expected that more than 10,000 distributors, dealers and service stations of the Tide Water Associated Oil Company, from coast to coast, will be in the tire business shortly after Jan. 1, 1947.

The contract was signed by William F. Humphrey, president of Tide Water Associated, and H. N. Hawkes, assistant general manager of the Tire Division of United States Rubber Company, with B. I. Graves, vice-president of the oil company, and other officials of both

(*Continued on page* 198)

Weekly Production Of Cars and Trucks In U. S. and Canada*

Week Ending	1946	Corresponding Week In 1941
Aug. 3	78,190	62,146
10	77,825	41,795
17	88,990	45,550
24	91,360	45,525
31	74,960	39,965
Sept. 7	72,535	32,940
14	88,888	53,165
21	80,972	60,615
28	85,572	77,035
Oct. 5	91,925	76,820
12	86,330	79,065
19	89,540	85,600
26	87,680	91,855
Nov. 2	95,752	92,879
9	92,760	93,585
16	94,425	92,990
23	96,461	76,820
30	77,222	93,195
Dec. 7	93,907	92,205
14	96,887	95,990
21	96,754	65,870
28	63,955	24,620
Yearly Total	3,141,746	5,108,213

* Compiled by Ward's Automotive Reports

New Passenger Car Registrations*

First 10 Months 1946 and 1941 Compared.

MAKE	October 1946	September 1946	October 1941	Ten Months 1946	Ten Months 1941	Per Cent to Total Ten Months 1946	Per Cent to Total Ten Months 1941
Ford	41,871	37,546	24,670	249,291	548,300	19.03	16.17
Chevrolet	41,516	43,292	40,243	209,421	809,392	15.99	23.87
Plymouth	24,212	25,296	21,052	172,599	415,125	13.17	12.24
Dodge	13,181	14,620	10,455	108,144	195,326	8.25	5.76
Buick	20,049	18,918	10,588	82,341	276,950	6.29	8.16
Pontiac	16,988	14,354	12,054	74,620	258,124	5.70	7.61
Nash	8,636	7,231	3,398	64,499	70,990	4.92	2.09
Oldsmobile	13,899	12,605	7,832	59,568	207,927	4.55	6.13
Hudson	7,234	8,578	4,149	56,085	66,214	4.28	1.95
Chrysler	6,277	7,230	5,912	52,642	132,008	4.02	3.89
De Soto	4,810	5,382	4,450	44,445	83,242	3.39	2.45
Mercury	8,846	7,151	3,395	43,338	73,051	3.31	2.15
Studebaker	7,353	7,912	6,194	42,688	101,568	3.26	2.99
Packard	4,579	4,399	6,082	25,726	60,256	1.96	1.78
Cadillac	3,131	3,008	2,728	15,061	53,411	1.15	1.57
Lincoln	1,437	1,242	969	7,361	16,417	.56	.48
Crosley	616	419	136	1,264	958	.10	.03
Willys	219	22	1,135	241	20,407	.02	.60
Kaiser	133	3	.....	138	.....	.01	.....
Frazer	119	4	.....	124	.....	.01	.....
All Others	74	69	43	441	2,565	.03	.08
Total	225,180	219,281	165,486	1,310,037	3,392,231	100.00	100.00

*—Data from R. L. Polk & Co.

Industry Increases Use Of Trucks for Short Hauls

Benefiting by its experience during the war, the automotive industry today is using truck shipments at twice the prewar rate for moving parts and materials within a range of 300 miles of the manufacturing plants. According to an AMA survey, the automotive manufacturers learned during the war to appreciate the flexibility of trucks in keeping pace with fast changing supply needs. One company now moves nearly everything within 300 miles by truck and averages about 400 inbound shipments a day, twice the prewar figure. It also began truck shipments from New England points during the war and has found it profitable to continue. The motor truck has been particularly valuable during the past year of shortages to pick up small-lot cargoes of parts vitally needed to keep the assembly operation going.

AAA NATIONAL DRIVERS POINT STANDING

As of November 29, 1946

Position	Driver	Total Points
1	Ted Horn	2,368
2	*George Robson	1,484
3	Bill Holland	1,280.6
4	Emil Andres	1,208
5	T. Hinnershitz	896.8
6	Walt Ader	850
7	Jimmy Jackson	800
8	Joie Chitwood	693
9	Rex Mays	613
10	Duke Dinsmore	454
11	Louis Durant	400
12	Henry Rogers	371
13	Tony Bettenhausen	340
14	Earl Johns	309
15	Gigi Villoresi	300

* Deceased.

New High For Racing Prize Money

Seventy-eight automobile racing events paid a total purse of $304,432 to winners during the 1946 season, Col. Arthur W. Herrington, chairman, told members of the Contest Board of the American Automobile Association at the fall executive meeting recently. This purse—approximately 50 per cent greater than that paid in 1941—represents prize money distributed at both championship and non-championship events under A.A.A. sanction.

Over 3600 miles were run at both dirt track and championship events, paying approximately $84.50 per mile average. The 1941 mile average was slightly over $55.

"This increase over the last prewar year of racing is due largely to the trend towards paying purses on the basis of percentage of the gate, prevalent in the automobile racing field today," Col. Herrington pointed out. "National Championship races on the one-mile dirt tracks were, for the first time,

(*Continued on page* 92)

Kaiser-Frazer Completes First Year of Security Fund Pact with UAW-CIO

Kaiser-Frazer and Graham-Paige this week measured the pros and cons of their Security Trust Fund arrangement with the United Automobile Workers.

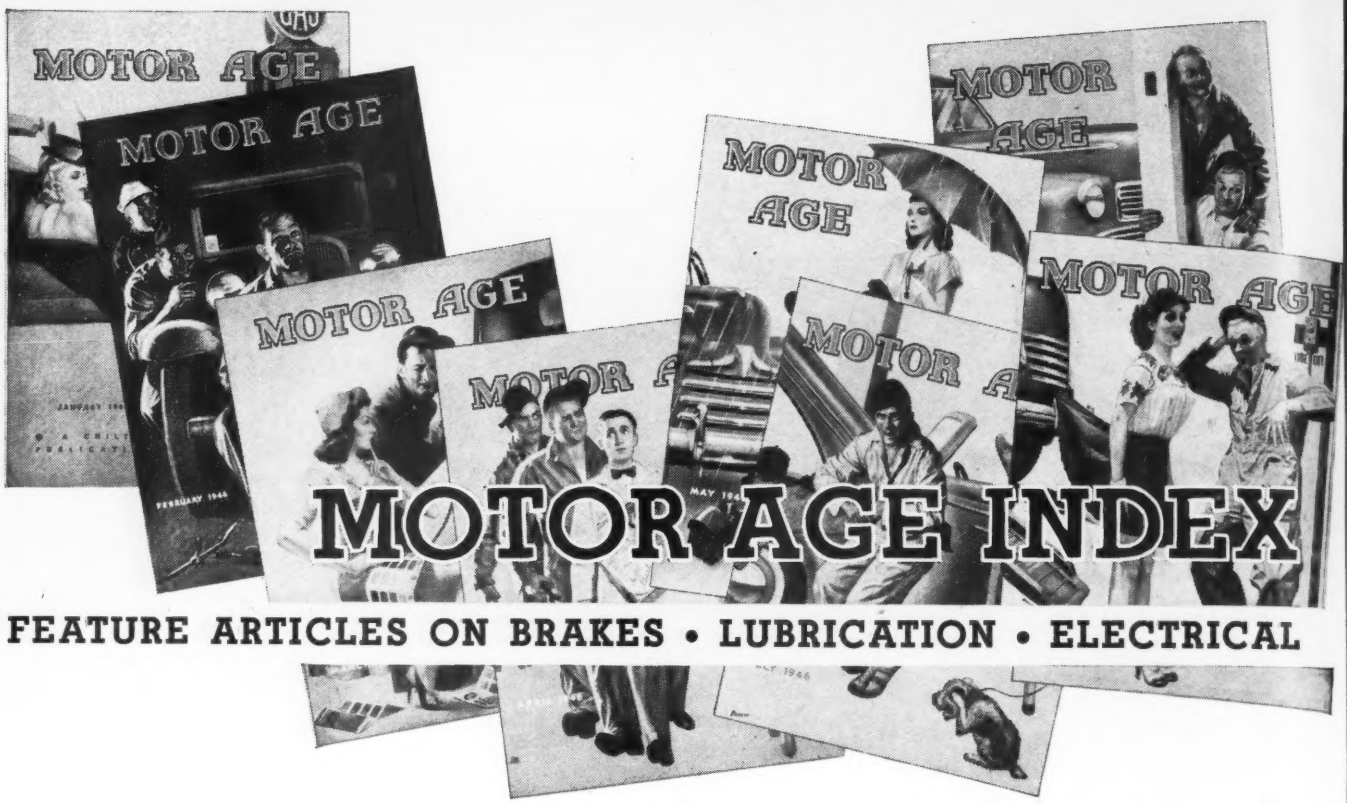
Company executives, weighing the two factors, concluded that the plan was well worth while. The cost to the company since the contract was signed last January was $55,036—five dollars for each of the 7515 automobiles and $1.25 for each of the 13,969 Rototillers shipped from Willow Run, Mich., through Nov. 30. The sum was shared among 2759 eligible production workers on Dec. 20. The bonus checks averaged $19.78.

Benefits the management received from the agreement could not be gaged precisely—but two facts were clear: The Willow Run plant in its first year of production had experienced no serious work stoppages. The plant had an extremely low rate of absenteesim.

To be eligible to share in the fund, a production worker had to have three qualifications: He must not have taken part in an unauthorized strike or work stoppage, he

(*Continued on page* 200)

The current model Nash differs from its predecessor only in minor details. The grille-work across the front is slightly wider. The radiator ornament has been changed, and interior trim is now maroon Tenite. Last month's Motor Age carries a more complete description.



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CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

Bill Toboldt, Editor, Motor Age

Identical Advance Springs Used on Nash Distributor

Our service manager and I had an argument as to which spring in the distributor of the Nash 600 Series was the low speed control spring on the governor of same.

He contends that the heavy spring is the low speed and the light spring the high speed control.

I contended that to adjust the tension on the heavy spring to the point where it becomes tight is the wrong procedure.

We have had quite a bit of trouble with these distributors at low speed. Will you get me the data on governor advance which can be used on the "Sunnen" machine for checking the degrees of advance? We have this machine but without the proper data it is impossible to be sure when you have it set right.—H. E. Shimer, 3277 Tuxedo St., Pittsburgh 4, Pa.

I HAVE checked the advance springs as used on the distributor of the Nash 600 Series 1942 and also for the same car in 1941, as these distributors are identical. Evidently there is an error somewhere in the distributor which you have checked for according to the official Delco-Remy parts book, the two springs used in the automatic advance are identical—the part number being 1882956 and the distributor is No. 111052. Quite possibly somebody replaced the spring with wrong type, and I would suggest that you install the correct springs in order to get the correct spark advance on this engine.

I am sorry I do not have the details for checking this distributor on your particular equipment. However, I would suggest that you write to the manufacturer direct, requesting a copy of their shop manual for the type machine you have.

Plymouth with Rebuilt Engine Develops Noise

I have a 1936 Plymouth with a Model 218 replacement motor in it. This is supposed to be a 1942 Plymouth motor. I'm using the old 1936 Plymouth distributor on it and am not satisfied with the results. Can you tell me what distributor is correct for this engine?

Also it has a noise that shows up on a pull at 50 m.p.h. and at 70 smooths out and you couldn't ask for anything nicer. This job has the big clutch and a regular Chrysler product hub and disc. Oil pressure with IOW oil is never below 40 at driving speed. Noise has been there since the motor was installed. Do these clutches develop a vibration like that? I'll appreciate any information you can give me.—Royal Ostrander, 712 5th St., Rapid City, S. Dak.

ACCORDING to our records the 1942 Plymouth engine should be fitted with an Auto-Lite distributor, Model IGS-4203A-1. The breaker point gap should be .020 in. and the breaker spring timing should be 17 to 20 ounces. Maximum total spring spark advance should be 20 degrees and the cam angle should be 38 degrees. I would suggest you compare this distributor with the one which came with the 1936 Plymouth.

Unfortunately you did not describe the noise that you are experiencing between 50 and 70 miles an hour. I would suggest you check such units as water pump, fan belt and generator for the noise before going into the engine itself.

If the noise seems to be coming from the clutch it might be that you have installed the universal joints incorrectly, resulting in an unbalanced condition. To the best of my knowledge there is no particular noise that should come from these clutches but you might check to make sure that none of the release springs have broken and also that the damping springs in the clutch hub are intact and not broken.

Front End Oil Leak On 1933 Chevrolet

I am wondering if you can enlighten me on the trouble of a '33 Master Chevrolet motor, throwing oil out of the timing gear cover at the vibrator damper. This motor has been completely overhauled, including new crankshaft, mains and rods. I have installed a new oil deflector, timing gear cover and gasket but the trouble continues.

(Continued on page 78)

Studebaker starts 1947 still first by far in automotive progress

Studebaker's first by far with a completely new postwar car

Studebaker's first by far in revolutionary new postwar styling

Studebaker's first by far in postwar riding comfort and handling ease

Studebaker's first by far with advanced features:

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"Black light" instrument dials
Improved automatic overdrive
Improved Climatizer heating and ventilating system

Studebaker

AMERICA'S FRIENDLIEST FACTORY

First by far with a postwar car

THE STUDEBAKER CORPORATION, SOUTH BEND 27, INDIANA, U.S.A.

CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

I have checked with a number of mechanics but they can't seem to enlighten me on the matter. Would appreciate your help. — Cecil E. Phelps, Box 222, Rt. 1, Granite City, Ill.

AFTER carefully studying the trouble you are experiencing with an oil leak at the front end of the 1935 Master Chevrolet, I am of the opinion that the trouble is caused by the metering jet in the timing case which meters the oil going to the timing gears. This metering jet occasionally drops out or is not replaced, with the result that the timing gears are flooded with oil and the oil return to the crankcase is inadequate.

Stewart-Warner Brakes On 1935 LaSalle

Have been having trouble with the brake on a 1935 LaSalle. Would like very much to get something for reference.

The vehicle is a bus with a Stewart-Warner brake system. Have adjusted jacks. Have adjusted at wheels. The owner claims new linings. Complaint: Brakes do not release after application. When bus is moved they seem to lock and drag front wheels.

Have not pulled a wheel yet as there never seems time between trips and would like to know what I am going to do before I get too much apart as I am not acquainted with this type brake.—K. L. Musch, 24 Union St., Livermore Falls, *Maine.*

ON your 1935 LaSalle which is equipped with a Stewart-Warner brake, I do not think that the trouble is likely to be in the wheels or shoes. However, you might check these to make sure that the springs are still up to tension and release the shoes when the pedal is released.

I am more inclined to think you will find the trouble in the power unit and in this connection I would pay particular attention to the output yoke and input yoke, making sure that these are operating freely and are not bound.

I would also suggest you check the buffer thrust collar and make sure the friction discs are not excessively worn and are free to slide on the splined shaft.

This power unit is not a complicated unit and you should have no hesitancy in taking it apart. You might also check the splined shaft to make sure it is not sprung.

From His Experience A Subscriber Suggests

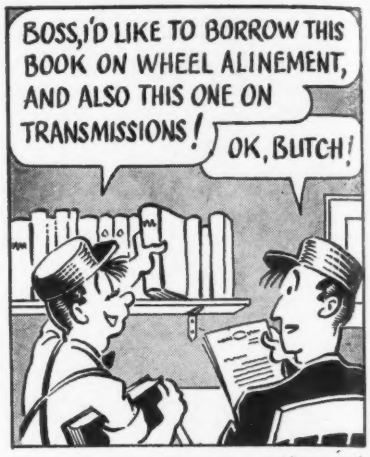
Enjoy reading your servicemen's clearing house letters. Trouble-shooting is very interesting and I like it very much. Would like to make comment on several problems that were submitted in October MOTOR AGE. *— An Illinois subscriber.*

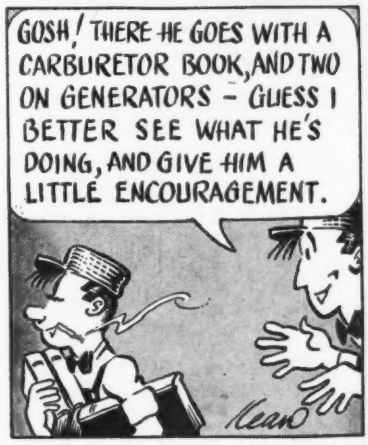
My experience with Chrysler made cars on cold starting is that dirty and poor seating valves cause the most trouble. Compression may check good, as this party says, but he does not say it is up to specifications and it is my belief that if he does a good valve grind job on this car it will start easily. Also watch that there is no starter drag from worn bushings.

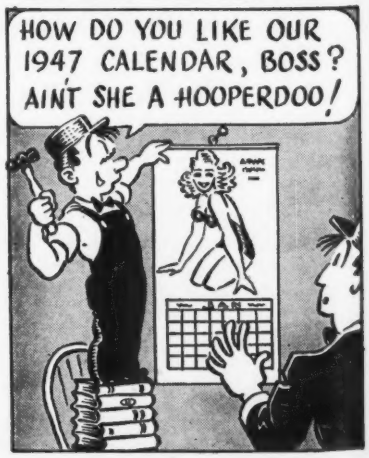
We have had some experience with vibrations in Cadillac. Installed clutch assembly in 1937 model and had to do the job over as we found that the clutch was out

(*Continued on page* 128)

BUTCH . . .

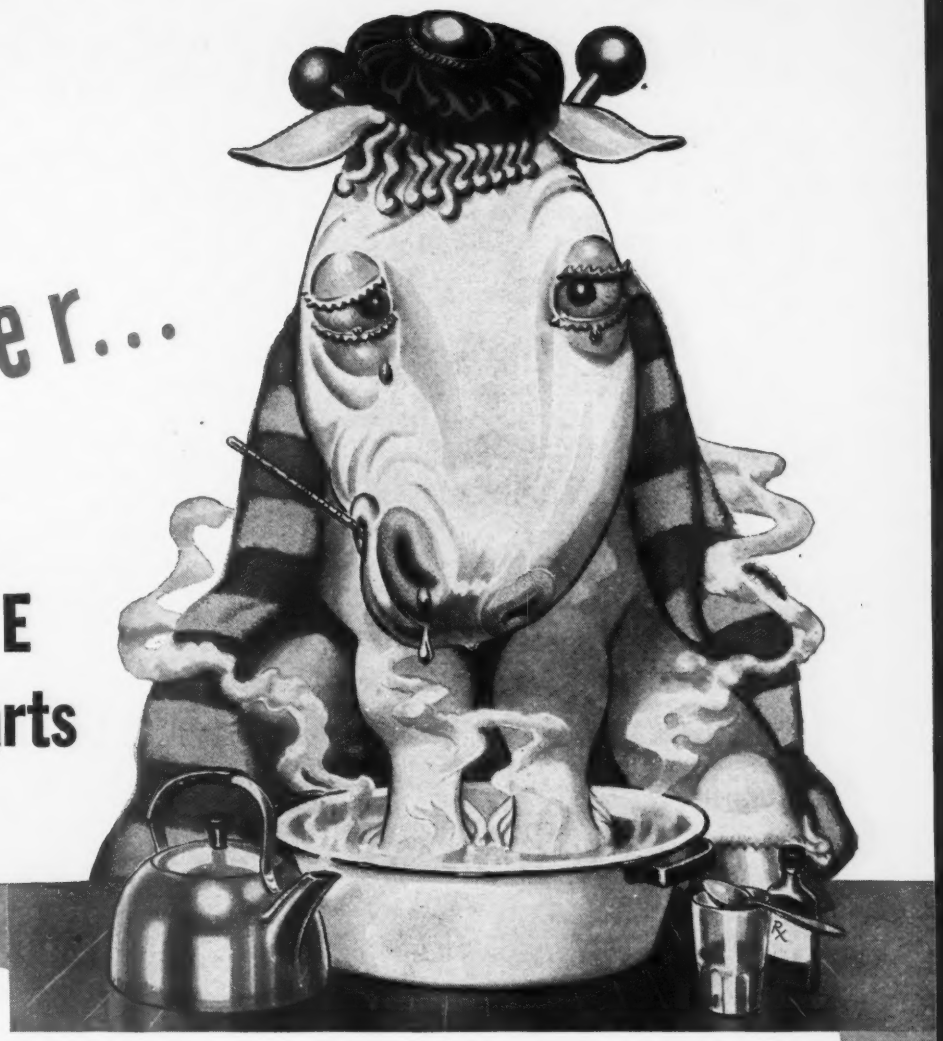






Cold Horsepower...

Sells CASITE for Quick Winter Starts



★ Cold weather is Casite weather. Cars cough, wheeze—refuse to start. It takes Casite to get them going.

Even in sub-zero weather, Casite retards congealing of oil . . . lets motors spin over rapidly . . . *guarantees* quick, battery-saving starts!

Casite also gives better and smoother performance all-year-round in any motor . . . assures more efficient break-in of new motors.

Two big network radio programs on more than 525 stations plus powerful advertising in leading magazines means heavy demand for Casite—a bonanza in extra profits for *you*. Tie in with Casite's gigantic "Quick Starting" drive. Your jobber has Casite.

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TWO GREAT RADIO SHOWS

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"Adventures of Michael Shayne"

Tues. nights • (Wed. nights on West Coast) • MBS

WE GUARANTEE that any motor capable of being started in a warm room will start promptly in the coldest weather when Casite is added to the crankcase according to instructions. If your car fails to start quickly, you get double-your-money-back by filling out guarantee certificate and mailing it to The Casite Corporation, Hastings, Michigan. Maximum refund is $1.30 per pint, twice the advertised price of Casite.

A pint in the crankcase every oil change or every 1000 miles

A pint through the air intake every 3 months

CASITE GUARANTEES QUICK STARTING IN WINTER WEATHER OR DOUBLE-YOUR-MONEY-BACK

LIST PRICE 65¢ A PINT

CASITE cleans motors • Keeps motors clean

SELLING POWER

That folding paper in your wallet wasn't ripped out of a book, but there's a close family connection

by ED HEVNER

"The Sweat of your Brow"

HERE are two interesting facts.

The highest paid profession averages for its practitioners around $8,500 a year, and some doctors earn as much as $75,000 annually, or more.

The average doctor spends a month of his time in clinics, and in reading medical treatises and medical journals.

Think about those two facts for a moment.

They add up to the inescapable conclusion that one major reason why doctors are on the average the highest paid of all professional men is because they are students—constant students of their profession, following its findings, its opinions, its research. One-twelfth of their time is invested in study.

The profession of retailing transportation and of maintaining motor vehicles is so similar in principle to medical work that one prominent manufacturer has for years been advertising the auto repairman as a "doctor of motors," which he is, and more.

And the similarity doesn't end there. Those repairmen who devote some part of their time systematically to a study of their profession, by reading a trade publication like MOTOR AGE, are almost invariably the largest money-makers in their business.

The list of subscribers to a publication like MOTOR AGE is the list of the best establishments and of the most skillful repair and maintenance men. Those two facts work out in the retail automotive field just as surely as they do in the medical field, or in any other profession.

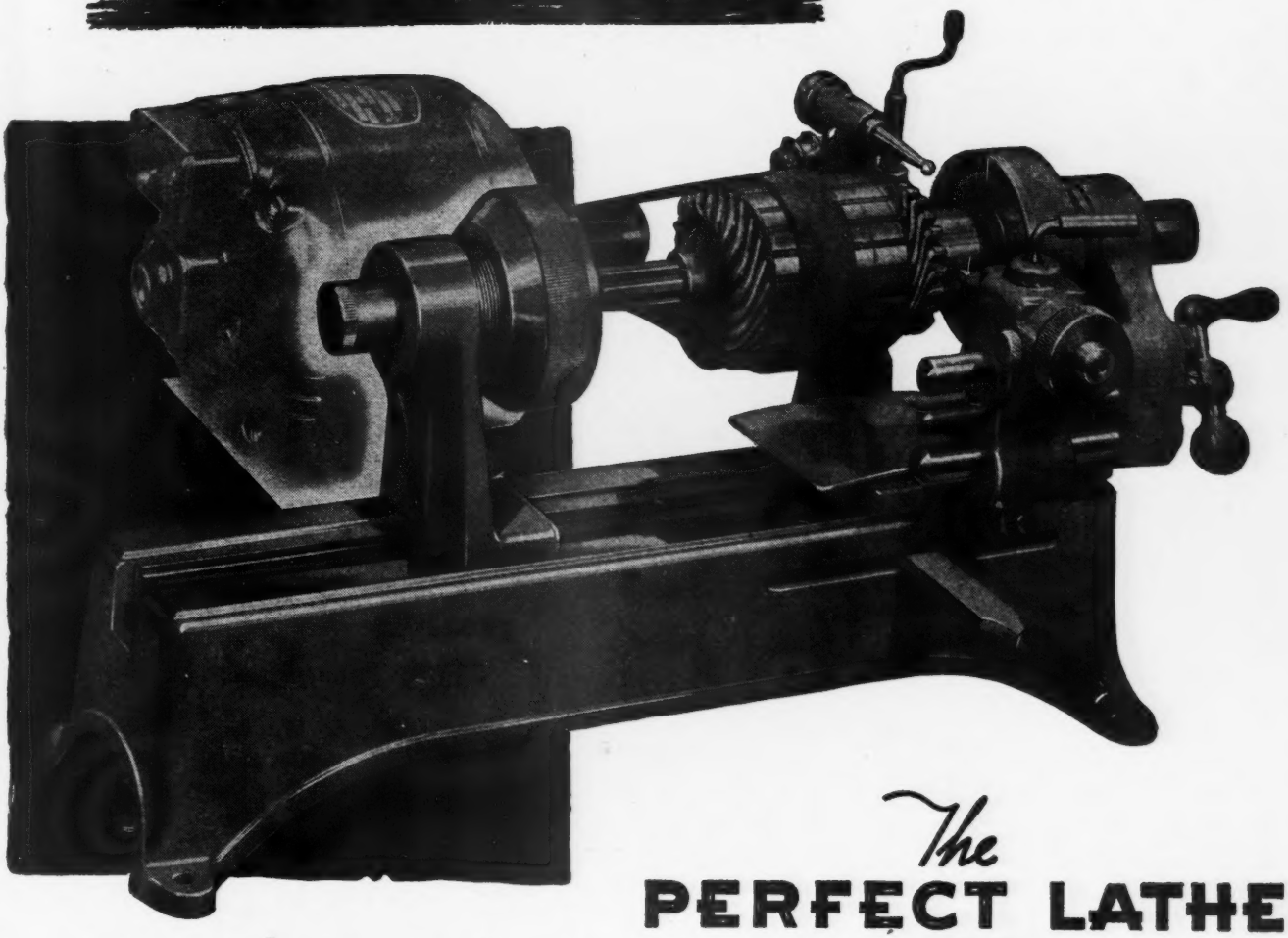
Sales power is rooted in knowledge—of the latest and best methods of trouble-shooting, of the know-how of the best ways to get results; and no man in automotive repairing can keep abreast of the best ways except by faithful reading of his trade publication, any more than can a doctor know what's going on without reading his medical journal.

Every day MOTOR AGE records new and better repair procedures. Its field men discover some by visiting the shops. It receives many by mail from subscribers who want to share their discoveries with others. It pays $5 for each Shop Kink it accepts, and Bill Toboldt's Clearing House is a veritable gold mine of such material.

The progressive repairman, however, gains more from his systematic reading than mere techniques. He widens his horizon, expands his understanding of conditions, and from many articles and interpreted news, he is able at all times to properly chart his business course.

Yes, the most successful automotive men have sales power—a power that comes from mental alertness and an awareness of conditions, and from minds that their favorite business paper have opened up to new possibilities and an increased business volume.

TRUCUT



The PERFECT LATHE FOR ARMATURES

YOU don't need a heavy and expensive lathe to machine and undercut armatures. With the TRUCUT Armature Lathe you can machine and undercut armatures with precision exactness.

There's no need of spending big money and filling up valuable shop space when you can do the job better with a TRUCUT Armature Lathe. Just a small corner of a work bench is all that is needed. Plug your TRUCUT into the socket and you're ready to go. Best of all you can move it from place to place in the shop if need be. The TRUCUT Armature Lathe weighs only 55 lbs.

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Don't forget that the TRUCUT Armature Lathe is in daily service in thousands of garages and shops all over the country. It is not an experiment, but a proven, practical tool.

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Current Engine and Tune-up Specifications

MAKE AND MODEL	Wheelbase (In.)	ENGINE: No. of Cylinders, Bore and Stroke	Taxable Hp.	Piston Displacement (Cu. In.)	Maximum Brake Hp. at Specified R.P.M. (with Bare Engine)	Compression Ratio	TUNE-UP DATA: Compression Pressure at Cranking Speed (Lbs.)	Spark Plug Make and Type	Rings: No. and Width Compression	Rings: No. and Width Oil	VALVES: Seat Angle: Inlet	Seat Angle: Exhaust	Stem Diameter (In.) (Inlet)	Operating Tappet Clearance: Inlet	Operating Tappet Clearance: Exhaust	Inlet Tappet Clearance for Valve Timing	Timing: Deg. Inlet Opens Before or After TC	Timing: Timing Marks Located	IGNITION: Breaker Point Gap	Cam Angle (Deg.)	Spark Plug Gap	Timing: Spark Occurs °TC	Timing: Timing Marks Located	Rods Removed From	Crankcase Capacity, Refill (Qts.)	Cooling System Capacity (Qts.)	FRONT AXLE: Caster (Deg.)	Camber (Deg.)	Toe-in (In.)	King Pin Inclination (Deg.)
Buick.....Eight, 40	121	8-3 3/32x4 1/8	30.6	248.0	110-3600	6.3	112	AC-48	2-3/32	2-3/16	45	45	.372	.015H	.015H	.015	13BT	None	.015	31	.025	4BT	Fly	A	5 1/2	13	+3/8±3/8	N1/8 to +1 1/8	0 to 1/16	4 1/8
Buick.....Eight, 50	124	8-3 3/32x4 1/8	30.6	248.0	110-3600	6.3	112	AC-48	2-3/32	2-3/16	45	45	.371	.015H	.015H	.015	13BT	None	.015	31	.025	4BT	Fly	A	5 1/2	13	+3/8±3/8	N1/8 to +1 1/8	0 to 1/16	4 1/8
Buick.....Eight, 70	129	8-3 1/16x4 5/16	37.8	320.2	144-3600	6.6	114	AC-48	2-3/32	2-3/16	45	45	.372	.015H	.015H	.015	14BT	None	.015	31	.025	6BT	Fly	A	7	16 3/4	+3/8±3/8	N1/8 to +1 1/8	0 to 1/16	4 1/8
Cadillac.Eight, 61, 62, 60	(a)	8-3 1/8x4 1/2	39.2	346.0	150-3600	7.2	100	AC-104	2-3/64	1-3/16	45	45	.342	HA	HA	HA	TC	VD	.015	31	.030	5BT	VD	A	6 1/2	25	N1 3/4 to N2 3/4	N3/8 to +3/8	1/32 to 1/32	5° 51′
Cadillac.....Eight, 75	136	8-3 1/8x4 1/2	39.2	346.0	150-3600	7.2	100	AC-104	2-3/64	1-3/16	45	45	.342	HA	HA	HA	TC	VD	.015	31	.030	5BT	VD	A	6 1/2	25	N1 3/4 to N2 3/4	N3/8 to +3/8	1/32 to 1/32	5° 51′
Chevrolet.....Six	116	6-3 1/2x3 3/4	29.4	216.5	90-3300	6.5	.....	AC-M8	2-.123	1-.186	30	30	.341	.006H	.013H	.006	3BT	Fly	.018	39	.040	5BT	Fly	A	5	15	0±1/2	N1/4 to ±1/2	0 to 1/16	4 3/4±1/2
Chrysler.....Six, C-38	121 1/2	6-3 7/8x4 1/2	28.4	250.6	114-3600	6.6	125	AL-A5	2-3/32	2-3/32	45	45	.340	.008H	.010H	.014	12BT	VD	.020	34 1/2	.025	2AT	VD	A	5	17	N1 to +1	0 to 3/4	0 to 1/16	4 3/4 to 6
Chrysler.....Six, C-39	127 1/2	8-3 1/4x4 1/8	33.8	323.5	135-3400	6.7	125	AL-A5	2-3/32	2-3/32	45	45	.625	.008H	.010H	.011	12BT	VD	.018	27	.025	2AT	VD	A	6	26	N1 to +1	0 to +3/4	0 to 1/16	4 3/4 to 6
Crosley.....Four, CC-46	80	4-2 1/2x2 1/4	10.0	44.0	26.5-5400*	7.5	135	AL-A7	2-1/16	1-3/32	45	45	.312	.006C	.006C	.....	5BT	None	.020	46	.025	12BT	Fly	B	3	5	8 1/2	2	3/16 to 1/16	6 1/2
De Soto.....Six, S-11	121 1/2	6-3 7/16x4 1/4	28.3	236.6	109-3600	6.6	125	AL-A5	2-3/32	2-3/32	45	45	.340	.008H	.010H	.014	12BT	VD	.020	34 1/2	.025	TC	VD	A	5	17	N1 to +1	0 to +3/4	0 to 1/16	4 3/4 to 6
Dodge.....Six, D-24	119 1/2	6-3 1/4x4 5/8	25.3	230.2	102-3600	6.7	120	AL-A5	2-3/32	2-3/32	45	45	.340	.008H	.010H	.014	12BT	VD	.020	34 1/2	.025	2AT	VD	A	5	15	N1 to +1	0 to +3/4	0 to 1/16	4 3/4 to 6
Ford.....Six 6GA	114	6-3.3x4.4	26.1	226.0	90-3300	6.7	.....	Ch-H10	2-3/32	2-3/16	45	45	.310	.013C	.015C	.015	5BT	.....	.015	35	.025	1BT	.....	A	5	14 1/2	5 1/2 to 8	1	1/8	8
Ford.....Eight, 69A	114	8-3 3/16x3 3/4	32.5	239.4	100-3800	6.7	160(b)	Ch-H10	2-3/32	2-3/32	45	45	.311	.011C	.015C	.015	TC	DH	.015	35	.025	4BT	.....	A	5	22	5 1/2 to 8	1	1/8	8
Frazer.....Six, F-47	123 1/2	6-3 3/16x4 5/8	26.3	226.0	100-3600	7.3	.....	Ch.....	2-3/32	2-3/32	30	45	.341	.010C	.014C	.010	10BT	FVD	.020	38	.032	.....	FVD	A	5	15	0 to 1/2	1/4 to N1/4	0 to 1/16	5 1/2 to 6
Hudson.....Six, 51-52	121	6-3x5	21.6	212.0	102-4000*	6.5	120	Ch-J9	2-3/32	2-(c)	45	45	.341	.006H	.008H	.....	10 2/3BT	Fly	.020	34	.032	1/4°BT	Fly	A	4 1/2	13	0±1/4	1/4±1/4	1/32±1/32	3° 36′
Hudson....Eight, 53-54	121	8-3x4 1/2	28.8	254.0	128-4200*	6.5	119	Ch-J9	2-3/32	2-(c)	45	45	.341	.006H	.008H	.....	10 2/3BT	Fly	.017	30 1/2	.032	TC	Fly	A	7	18	0±1/4	1/2±1/4	1/32±1/32	3° 36′
Kaiser.....Six, K-100	123 1/2	6-3 3/16x4 5/8	26.3	226.2	100-3600	7.3	.....	Ch.....	2-3/32	2-3/32	30	45	.341	.010C	.014C	.010	10BT	FVD	.020	38	.032	TC	FVD	A	5	15	0 to 1/2	N1/4 to +1/4	0 to 1/16	5 1/2 to 6
Lincoln....Twelve, 66H	125	12-2 11/16x3 3/4	41.4	305.0	130-3600	7.2	167(b)	Ch-H10	2-3/32	1-3/16	45	45	.311	HA	HA	HA	10.4 BT	TG	.014	35	.027	2BT	None	A	5	27	4	3/4 to 1	1/16 to 1/8	4
Mercury....Eight, 69M	118	8-3 3/16x3 3/4	32.5	239.4	100-3800	6.7	160(b)	Ch-H10	2-.091	2-.154	45	45	.311	.011C	.015C	.015	TC	DH	.015	35	.025	4BT	.....	A	5	22	7.2	1	1/16	8
Nash.....Six, 4640	112	6-3 1/8x3 3/4	23.4	172.6	82-3800	7.1	120	AL-A7	2-3/32	1-3/16	45	45	.341	.015	.015	.019	6BT	.....	.020	....	.025	TC	VD	A	5	14	1/4 to 3/4	1/4 to 3/4	1/8 to 3/16	7 1/2
Nash.....Six, 4660	121	6-3 3/8x4 5/8	27.3	234.8	112-3400	6.8	125	AC-45	2-.124	2-.155	44	44	.372	.015	.018	.008	24 1/2BT	.....	.020	....	.025	4BT	VD	A	6	17	0 to N1/2	1/4 to 3/4	1/32 to 1/32	4 1/2
Oldsmobile.....Six	125	6-3 1/8x4 1/8	29.4	238.1	100-3400	6.5	115	AC-48	2-3/32	2-3/16	30	45	.342	.008H	.011H	.012	5BT	Fly	.020	35	.040	TC	Fly	A	5	18 1/2	0 to N3/4	N1/4 to +3/4	1/16 to 1/8	4° 51′ 10″
Oldsmobile.....Eight	125	8-3 1/4x3 7/8	33.8	257.1	110-3600	6.5	100	AC-48	2-3/32	2-3/16	30	45	.342	.008H	.011H	.012	TC	.....	.015	31	.030	2BT	Fly	A	6	20 1/2	0 to N3/4	N1/4 to +3/4	1/16 to 1/8	4° 51′ 10″
Packard.....Six, 2100	120	6-3 1/8x4 1/4	29.4	245.0	105-3600	6.7	.....	(d)	2-(e)	1-3/16	30	45	.339	.007H	.007H	.012	1BT	.....	.018	....	.025	4BT	.....	...	5	14	N1±1/2	0±1/4	0+1/16—0	5° 35′
Packard.Eight,2101,2111	120	8-3 1/4x4 1/4	33.8	282.0	125-3600	6.8	.....	(d)	2-(e)	1-3/16	30	45	.339	.010H	.010H	.012	1BT	.....	.012	....	.025	5BT	.....	...	5 1/2	17	N1±1/2	0±1/4	0+1/16—0	5° 35′
Packard.Eight,2103,2106	127	8-3 1/8x4 5/8	39.2	356.0	165-3600	6.8	.....	(d)	2-(e)	1-3/16	30	45	.340	AA	AA	.....	4BT	.....	.012	....	.025	4BT	.....	...	7	20	N1±1/2	0±1/4	0+1/16—0	5° 35′
Plymouth.....Six, P-15	117	6-3 1/4x4 3/8	25.3	217.8	95-3600	6.6	115	AL-A5	2-3/32	2-3/32	45	45	.340	.008H	.010H	.014	12BT	VD	.020	34 1/2	.025	TC	VD	A	5	15	N1 to +1	0 to +3/4	0 to 1/16	4 3/4 to 6
Pontiac..Six, 1946-25, 26	(f)	6-3 3/16x4	30.4	239.2	93-3400	6.5	160♦	AC-45	2-3/32	1-3/16	30	45	.312	.011H	.011H	.011	5BT	CC	.020	37	.023	2BT	Fly	...	5	18	N1/2 to N1	1/4 to N1/4	0 to 1/16	4 3/8 to 4 7/8
Pontiac.Eight,1946-27,28	(f)	8-3 1/4x3 3/4	33.8	248.9	107-3700	6.5	158♦	AC-45	2-3/32	1-3/16	30	45	.312	.011H	.011H	.011	5BT	CC	.020	31	.023	2BT	Fly	...	5	19 1/2	N1/2 to N1	1/4 to N1/4	0 to 1/16	4 3/8 to 4 7/8
Studebaker.....1947-6G	.....	6-3x4	21.6	169.6	80-4000	6.5	105	Ch-J7	2-(g)	1-3/32	45	45	.312	.016C	.016C	.020	15BT	FVD	.020	35	.022	2BT	FVD	A	5	10	0 to +1	1/2±1/4	1/16 to 1/8	5 1/2
Studebaker....1947-14A	.....	6-3 3/16x4 3/8	26.3	226.0	94-3600	6.5	105	Ch-J7	2-3/32	1-3/16	45	45	.343	.016C	.016C	.020	15BT	FVD	.020	35	.022	(h)	FVD	A	6	13	0 to +1	1/2±1/4	1/16 to 1/8	5 1/2
Willys.....Jeep	80	4-3 1/8x4 3/8	15.6	§134.2	60-4000	6.5	‡110	‖AL-AN7	2-3/32	1-3/16	45	45	.373	.014	.014	.....	9BT	.....	.020	41	.030	5BT	.....	A	4	11	3	1 1/2	3/16 to 3/32	7 1/2
Willys.....4-63	104	4-3 1/8x4 3/8	§15.6	134.2	63-4000	6.5	‡110	AL-AN7	2-3/32	1-3/16	45	45	.373	.014	.014	.....	9BT	.....	.020	41	.030	.....	.....	A	4	11	1	1	1/32	5 1/2

ABBREVIATIONS

*—With standard accessories.
♦—At 1000 RPM
(a)—Model 61—126 in.; Model 62—129 in.; Model 60—133 in.
A—Above (Rods removed from)
AA—Automatic Adjustment
AC—AC Spark Plug Division
AL—The Electric Auto-Lite Corp.
AT—After Top Center
(b)—At 2400 RPM
B—Below (Rods removed from)
BT—Before Top Center
(c)—Upper ring .1875 in.; lower ring .15625 in.
C—Cold
CC—Crankshaft and Camshaft Sprockets
Ch—Champion Spark Plug Co.
(d)—AC104 or Champion Y4A
DH—Distributor Housing
(e)—Ring No. 1—.093 in.; Ring No. 2—.123 in.
(f)—Models 25 and 27—119 in.; Models 26 and 28—122 in.
Fly—Flywheel
FVD—Flywheel vibration damper
(g)—Top ring 1/16; Middle ring 1/8
(h)—3/16 in. Before Top Center
H—Hot
HA—Hydramatic
N—Negative
TC—Top Center
TG—Timing Gears
VD—Vibration Damper

LOW TEMPERATURES MEAN High Profits

WHEN YOU FEATURE

MOTOR RYTHM

MOTOR RYTHM *assures faster starts in cold weather!* This is the story to tell your customers this winter. It will build you a big volume of profitable, *repeat* business. Tie in with the big MOTOR RYTHM promotion program and profit by cold weather. Order from your jobber *now!* And be sure to ask him about the big, new MOTOR RYTHM deal that gives motorists a 95c value for only 75c . . . brings *you* even more business.

R. M. Hollingshead Corporation, Camden, New Jersey; Toronto, Canada. Warehouses: Dallas, San Francisco, Chicago.

- *Feature* MOTOR RYTHM *the year 'round!*
- *It's the modern, chemical, safe tune-up!*
- *It keeps motors clean inside!*
- *It assures fast starts in cold weather!*
- *It protects new motors during the critical break-in period!*

Whiz

A PRODUCT OF

Hollingshead

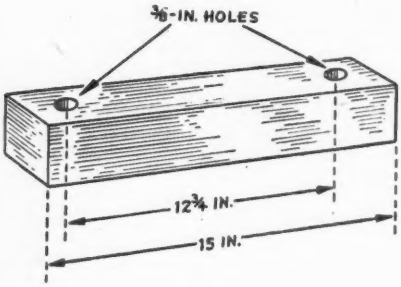
LEADER IN MAINTENANCE CHEMICALS

SHOP KINKS

Here's your chance to pick up a little extra money. We'll pay five bucks ($5.00) for every Shop Kink accepted and printed. So send 'em in to us —some short cut you use in doing a job easier and faster than the other fellow—some special tool you made when you couldn't buy one to do the job—and we'll do the rest. Incidentally we won't accept any that have previously appeared in any other automotive publication. Send 'em in!

Homemade Crossbar Lift

We have made a homemade crossbar lift for use on '37 to '46 Chevrolets. Made of a thick steel bar, about 15 in. long, two 3/8 in. holes



are drilled on 12 3/4 in. centers. The bar is fastened to the two center rocker arm shaft studs and makes it easier to lift and replace the head.—*Joe Doyle, Box 638, Bowie, Arizona.*

Jeep Engine Installation

We have found, from past experience, that in removing and installing Jeep engines it is quicker and easier to increase the size of the floorboard accelerator holes. This enables you to reach the bolts around the bell housing. — *John Nudo, Nudo's Garage, Dawson, Pa.*

Installing Ford Tie Bolts

I've worked out what I think is an easier way to install tie bolts in the rear springs of Model A Fords.

Remove the rear seat cushion and chisel a 1/2 in. square hole in the body near the bolt (there is usually an imprint of the old bolt visible in the body). Loosen the spring clamp bolts and drive out the old bolt with a punch. Use the punch to line up the hole and tap the leaves into place, if necessary. Drop the new tie bolt into place from inside the body, install the nut and draw it tight. Saw off the surplus part of the bolt and tighten the spring clamps. Install the rear seat and the job is done.—*Cecil L. Thomlison, Desloge, Mo.*

Plastic Fuse Holder

A very serviceable fuse holder can be made from a three inch square of 3/16 in. plastic, and spring copper or the special clips shown in the cut. Use small wood screws as they will cut their own threads in most materials of this type. Bring the wires in from the back of the plastic block and solder them to the copper fuse holding strips.—*P. A. Reed, 31 Argyle Ave., Uniondale, Long Island, New York.*

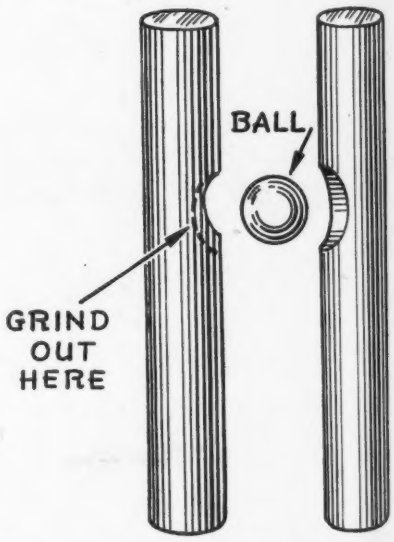
Aid to Door Hanging

When rehanging a door that has tapped anchor plates in the door or body pillar, it is often difficult to hold the plates in position while the hinge is being lined up.

One way to do it is to take some 2-in. bolts of the same threads and cut the heads off. Screw two of these studs into each plate, then slip the hinges over them, making it easier to find the holes.—*Robert L. McLaughlin, McLaughlin's Body Shop, 1101 W. Sandusky Ave., Bellefontaine, Ohio.*

Shift Bar Misalignment Corrected by Grinding

When it becomes difficult to shift into first and reverse on early Plymouth and Dodge cars, it is often due to misalignment of the shift



bars, due to wear. We have found this easy to remedy by grinding out one bar as in the illustration. We haven't had one fail yet.—*George G. Osler, 1515 N. 53rd St., Phil., 31, Pa.*

PREFERRED THE WORLD OVER

because they

CAN'T BLOW OUT

Guaranteed against blowouts and leakage for the life of the vehicle in which installed.

Blowouts are *impossible!* The exclusive International Parts construction fuses the metal into a solid, permanent bond in CONTINUOUS ELECTRICALLY WELDED SEAMS

"DUO-LOUVRE" DESIGN causes a stirring up of gases in such manner as to break up sound waves, which results in *super-silencing*. Cuts down back pressure. Prevents carbon clog.

INTERNATIONAL PARTS

Mufflers

SUPER SILENCING

INTERNATIONAL PARTS CORP., Chicago 5, U. S. A. ★ International Parts (Canada) Ltd., Toronto

A *Complete* LINE OF QUALITY AUTOMOTIVE REPLACEMENT PARTS

Greater ASI Show Draws Thousands

(*Continued from page* 34)

tition will become more and more evident as 1947 proceeds. Competition will be evident on every level in the industry. More dealers and shops are opening to compete for the service business on the retail level. Filling stations, chain-stores and tire outlets will be after a larger share of the service dollar. Wholesalers will see greater efforts on the part of the car and truck manufacturers to regain the share of the parts business lost during the war. They'll also face increased competition from the major oil companies and the major tire companies. Similar competition will be faced by manufacturers. All of which means that the present sellers' market is on its way out to be followed by a buyers' market in which superior merchandise, improved, better equipped shops and intelligent selling will win out.

Fourth—many types of service parts will continue to remain in short supply. Storage batteries, gaskets, certain engine parts and numerous supplies are still extremely critical and manufacturers have been forced to continue allotment plans started during the war. Materials going into these products are hard to get if at all available. Necessary machine tools and buildings required to increase productive capacity are still being waited for. Labor in many plants is still unable or unwilling to produce at anything near its prewar rate. Jobbers attending the show were as interested in learning when they could get merchandise as they were in learning what was new.

Fifth — although new products were not as numerous at the show as might have been expected at the first big national event of its kind since 1940 they still were plentiful enough to give the service trade promise of many interesting sessions with their jobber salesmen during 1947. New developments were particularly noticeable in the exhibits of equipment and tool manfacturers and it is in this field that the service trade will notice the biggest change since the war halted production of most types of equipment. Some of the equip-

(*Continued on page* 88)

"MY NAME MEANS MONEY TO ME!"

"I am an independent automotive serviceman. Folks around here know me and my service business. We do business together as friends and neighbors. I give them the best service. Because when I help them, they help me . . . with more business.

"Because I do business in my own name I must protect that name. I must make it stand for good service, honest merchandise and fair dealing.

"My customers know this. They come to me for dependable merchandise and service. Because they do, I supply them only nationally famous brands of automotive goods."

THE ROAD TO BUSINESS GROWTH

Your Independent Automotive Wholesaler—member of M.E.W.A.—can help you make your *independent* auto service grow. He knows that managing your own business and successfully operating it under your own name demands top service and performance-proven, nationally-famous merchandise.

He provides Seven Steps to Servicing Success that make it easier to run your own business profitably. Use these steps. See what they mean to you.

7 STEPS to Servicing Success

Your MEWA Wholesaler provides:

1. Parts, equipment and supplies you want when you want 'em
2. Precision machine shop service
3. Terms to fit your needs
4. Deliveries to speed your service
5. Freedom of choice of famous brands
6. Prestige of national brands free from tie-in agreements
7. Experienced business, merchandising and mechanical know-how

Let's do Business together!

©1946

YOUR WHOLESALER MEWA

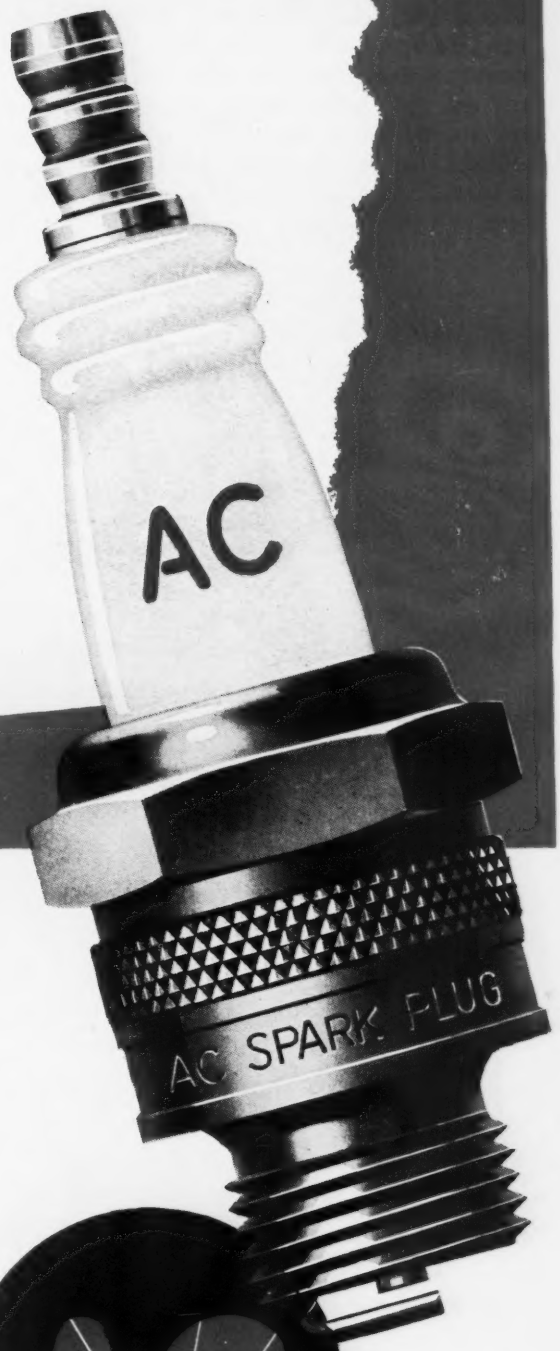
MOTOR AND EQUIPMENT WHOLESALERS ASSOCIATION

309 WEST JACKSON BOULEVARD, CHICAGO 6, ILLINOIS

"I wish you'd stay out of here. You're ruining business."

CHECK THE HEAT RANGE OF ALL PLUGS

When Checking Anti-Freeze



Here *is* an opportunity! Better gas, longer mileages, and normal driving speeds call for a "cooler" type of improved AC Spark Plugs. Plugs of a Heat Range that did a job in the days of lower octane gas and slower driving are too "hot" today. They are likely to split, blister, misfire, and cause preignition.

There are millions of these "wrong Heat Range" plugs still in use. Plenty are in your neighborhood. GET 'EM OUT! *You'll sell new plugs!*

Check the Heat Range of *all* plugs on every car, truck, bus, and tractor that comes in for *any* kind of service. Check it against the AC Specification Chart—*and be sure.*

ALWAYS CHECK HEAT RANGE

- ★ When CHECKING ANTI-FREEZE
- ★ When CHECKING OIL
- ★ When CHANGING OIL FILTERS
- ★ When RINSING AIR CLEANERS
- ★ When CLEANING FUEL SYSTEMS
- ★ When CRISS-CROSSING TIRES
- ★ On every BRAKE JOB
- ★ When CHANGING FAN BELTS
- ★ When you give a WASH
- ★ When you CHANGE OIL
- ★ When you LUBRICATE
- ★ When you SERVICE A BATTERY
- ★ When you TUNE UP and REPAIR

AC

SPARK PLUGS

AC SPARK PLUG DIVISION—GENERAL MOTORS CORPORATION

Greater ASI Show

(*Continued from page* 86)

ment announced at the show is just going into production and won't be on the market for several months. Other items are ready now and will soon be on display in jobber stores. There have been significant changes and improvements in parts lines, too, but they haven't been quite as dramatic as those in the equipment and tool field.

Almost every Automotive Service Industries Show in the past saw the announcement of at least one revolutionary service method or procedure. Not many years ago a number of piston ring manufacturers announced various methods of reclaiming collapsed aluminum pistons at the same show. At another former show, engine parts manufacturers were showing jobbers how to improve and modernize their engine rebuilding shops. The recent show brought out a method of fusing brake lining to shoes, eliminating the need for rivets, which is understood to be ready for early announcement by at least two well-known brake lining manufacturers. The growing market for automotive refinishing and retouching service was emphasized by the number of new color mixing machines shown by manufacturers of refinish materials. Wheel balancing and alignment will come in for increased attention because of the improved equipment available. Compounds to be sprayed on the undercarriage of cars and trucks for deadening sound, insulating and protection against the elements promise a growing and profitable service.

Importance of the show to the car and truck manufacturers was demonstrated by the large attendance of service managers and their staffs. Representatives of every vehicle manufacturer were on hand during the last three days of the show open to them. Representatives of export agencies also were on hand in good number accompanied by sales representatives traveling in overseas markets, all indicating that the demand for American automotive products is as great in foreign fields as it is here.

As in previous years each of the three sponsoring associations held its annual convention in conjunction with the show and two of these groups announced new officers for the ensuing year.

National Standard Parts Asso-

(*Continued on page* 94)

The Quiet is in the Package, too!

Mount a Federal Ball Bearing on a shaft . . . start the motor . . . then listen. The quiet you hear is a silent measure of Federal's over-all precision.

It means the ball track has been ground to a chatter-free finish and to just the right radius. The bore is cylindrical, not tapered or bell-mouthed; sides of the rings are parallel to each other and the ball track; the bearing is neither too tight nor too loose; and it has "purred" its way through Federal's rigid sound tests.

Rounding out this precision package are Federal-manufactured balls, uniformly spherical within .000025" and not varying in diameter more than .00005" in any bearing.

Before any Federal Bearing starts on its way to automotive assembly lines it has gone the route of over 100 individual production, inspection and cleaning operations . . . with *every fourth operator an inspector.* It all adds up to quiet running and smooth, frictionless operation.

The Federal Ball Bearing line is *complete,* in every range and size to meet *any* automotive requirement. Now is a good time to get acquainted with this *original equipment* ball bearing. Get in touch with the N.A.P.A. jobber nearest to you.

THE FEDERAL BEARINGS CO., INC.
POUGHKEEPSIE, NEW YORK

Makers of Fine Ball Bearings

Distributed Nationally Through
38 LOCAL N.A.P.A. WAREHOUSES

FEDERAL BALL BEARINGS

ONE OF AMERICA'S LEADING BALL BEARING MANUFACTURERS

"Someone in sales will have to talk to you—I work here."

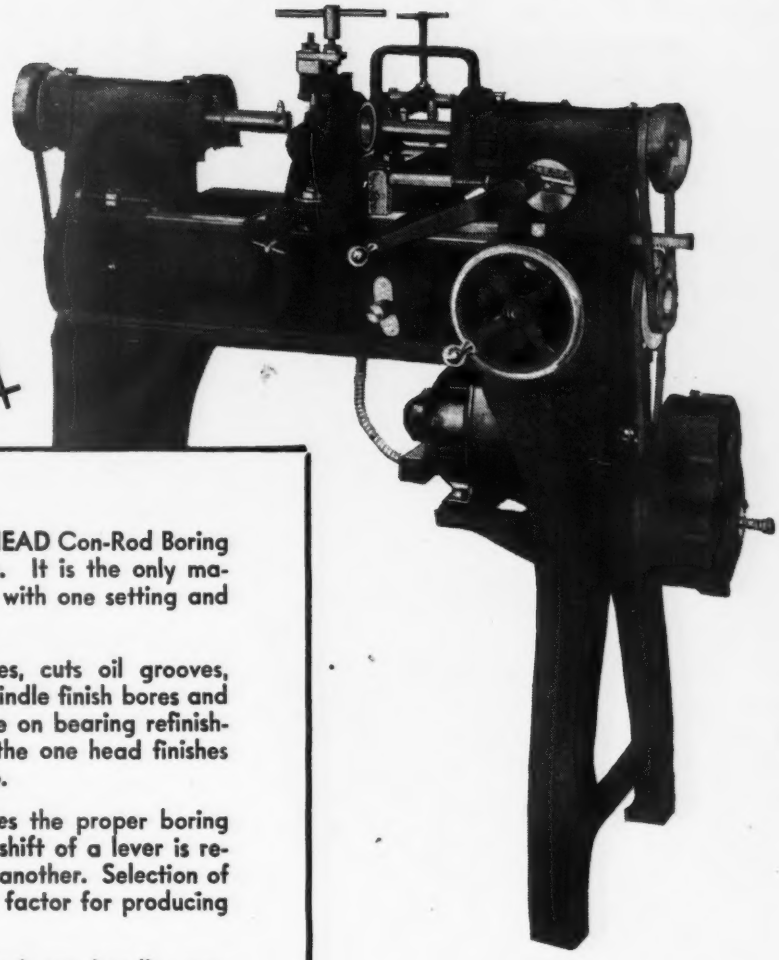
There is only one Twin-Head

CON-ROD BORING MACHINE...

...it is made by

WATERBURY Simplicity REG. U.S. PAT. OFF.

Motor Rebuilding Equipment



The WATERBURY-Simplicity TWIN-HEAD Con-Rod Boring Machine is fully covered by patents. It is the only machine that will completely finish rods with one setting and without any tool changes.

The right boring spindle rough-bores, cuts oil grooves, faces the bearing. The left boring spindle finish bores and faces. This dual operation saves time on bearing refinishing jobs. No time is lost . . . after the one head finishes its job, the other can follow right up.

The three speed transmission provides the proper boring speed for various size rods. Only a shift of a lever is required to change from one speed to another. Selection of proper boring speed is an important factor for producing most perfect results.

Shops equipped with the TWIN-Head can handle complete bearing service jobs right in their own shops. No need to turn over the most profitable part of such jobs to outsiders, or to carry a tremendous stock of standard connecting rods.

The TWIN-HEAD handles all con-rods from 1⅛" to 4" in diameter and 24" in length with a bearing surface up to 5¼" wide. This wide range of capacity makes it possible to refinish any size rod on automobile, bus, truck or tractor motors. A special boring fixture is furnished for Bronze back or Shell bearings from 1½" to 4" in diameter.

WRITE US FOR THE NAME OF YOUR NEAREST DISTRIBUTOR

THE WATERBURY - SIMPLICITY LINE OF PRECISION AUTOMOTIVE REBUILDING EQUIPMENT . . .

- Piston Turning & Grinding Machine
- Twin-Head Con-Rod Boring Machine
- Cylinder Reborer & Grinder
- Line Boring Machine
- Piston Corrector

WATERBURY TOOL

Division of Vickers Incorporated
174 EAST AURORA STREET
WATERBURY 91, CONN.

Exide... means business

WITH THESE MODERN, MONEY-MAKING, MERCHANDISING TOOLS.

1 A NEW LINE OF BATTERIES

THE HYCAP

The best battery that money can buy—The ultimate in battery craftsmanship—long-life—extra duty capacity.

Heavy over-size plates • Rugged construction throughout • Top grade active materials • Double insulation, Vitrex and treated wood • Hard rubber container and covers • Red polystyrene, dirt-proof, non-spitting vent plugs • "Bulls-Eye" electrolyte leveling device • Heavy over-size inter-cell connectors • Positive cover seals • Black lacquered top • Capacity ratings clearly indicated • New styling.

THE SURE-START

Exide's reputation builder through the years—Exide quality throughout—The standard of the Industry.

Standard size plates • Top grade active materials • Rugged construction throughout • Treated wood separators • Hard rubber container and covers • Red polystyrene, dirt-proof, non-spitting vent plugs • "Bulls-Eye" electrolyte leveling device • Inter-cell connectors of full cross-section • Positive cover seals • Capacity ratings clearly indicated • New styling.

THE STARTEX

Dollar value at a lower price, but an Exide Battery all the way.

Standard height lighter plates • Top grade active materials • Treated wood separators • Composition container • Standard Exide vent plugs • "Bulls-Eye" electrolyte leveling device • Positive cover seals • Conventional styling.

MORE THAN EVER BEFORE IT'S GOOD TO BE AN EXIDE DEALER

2 A NEW BATTERY MERCHANDISER

NEW EXIDE BATTERY MERCHANDISER with "Keepacharge"

A new and improved design of a most successful Exide dealer selling aid—an effective sales promotion item already proven by 22,000 battery retailers • It attracts • It displays from 9 to 13 popular type batteries • It sells better grade batteries automatically in three simple steps • The Keepacharge—an Exide designed trickle charger maintains 9 stock batteries fully charged, ready for sale.

3 A NEW FAST CHARGER-TESTER

NEW EXIDE SURE-START CHARGER-TESTER

The last word in fast charging and testing equipment—A Fast Charger, Slow Charger and Sure-Start Tester combined.

Tests batteries in the car accurately and convincingly for serviceability after safe fast charge • Tests for battery condition before charge • Sure-Start Service Procedure given on instrument panel • Thermostat Control insures maximum fast charge with safety—proper state of charge for accurate battery testing • Fast charges at 100 ampere rate • Slow charges up to six batteries at a time • Tests voltage regulators • Easy to operate—all controls clearly marked • Meter scale in use automatically illuminated • Mobile, efficient, built of finest materials, workmanship and design • Gives a Tested Recharge—makes battery sales and service easy and profitable.

4 STRONG NATIONAL ADVERTISING

in the big-circulation magazines which reach a large percentage of all car and truck owners . . . including most of your customers and prospects.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32

Exide Batteries of Canada, Limited, Toronto

PUT THESE TOOLS TO WORK. SEE YOUR EXIDE WHOLESALER

SOMETHING EXTRA

IN BRAKE SERVICE, TOO

PURITANIZE*

When your customer's brake fluid is low and requires a shot or two to bring it up, you can take care of him with Puritan Hydraulic Brake Fluid.

But if you want your customer to be sure of complete brake safety — for a long time to come—you'll suggest something extra—a *Puritanize job—a thorough cleaning out of dirty, gummy, overworked brake fluid with Puritan Hydraulic Brake Flushing Fluid and a replacement with fresh, active, Puritan Brake Fluid.

And Puritan Hydraulic Brake Flushing Fluid makes this flushing job easy to do, and profitable too. Once through the line and the system is thoroughly clean. Then a filling of Puritan Brake Fluid and your customer is assured of many miles of safe braking.

Just tell your NAPA jobber you want to do *Puritanize jobs. Let him send you fast-acting Puritan Hydraulic Brake Flushing Fluid and Puritan Hydraulic Brake Fluid.

***PURITANIZE . . . TO BRAKE SAFETY**

1. Clean hydraulic brake line with fast-acting Puritan Hydraulic Brake Flushing Fluid.

2. Refill with non-gumming, all-"miscible" Puritan Hydraulic Brake Fluid.

PURITAN COMPANY, INC.
ROCHESTER 6, NEW YORK
HYDRAULIC BRAKE FLUID AND FLUSHING FLUID • GASKA-SEAL NO. 1, 2 AND 3
SHOCK AND KNEE-ACTION OIL

NAPA Assurance of Quality

Racing Prize Money

(*Continued from page* 73)

sanctioned on the basis of a guaranteed purse against a percentage of the gate. As a result of this, the prize money has just about doubled what it would have been under the minimum purse arrangement. Races of this class—together with the Indianapolis '500'—paid approximately $177,000 of the total for the season. Certain events such as fair dates, however, have been and undoubtedly will continue to be sanctioned whereby such a percentage arrangement could not apply.

"One of the finest racing seasons under A.A.A. sanction is shaping up for the coming year. Pre-season interest is at an all-time high with around 40 sanction applications for the '47 season events already on file with the Contest Board. The adoption of a new race car specification formula," Col. Herrington concluded, "will provide much in the way of new developments in the engineering field, that will be incorporated in a wide variety of new cars and will undoubtedly result in a year of unsurpassed activity and progress in the racing field."

"Curve-Flex" Wiper Blade

The new Anderson Co. factory in Gary, Indiana, is the home of their latest product, the Anco "Curve-Flex" windshield wiper blade. Designed to flex freely to reach and clean depressed services on windshields, Curve-Flex is designed to clean any windshield, either flat or curved.

"Just tell him a group of his former patients would like to see him."

Put your steering service department in the spotlight with a John Bean VISUALINER. Its revolutionary new "beam of light" principal makes aligning easier, faster, more accurate, and completely visual . . . gives larger, quicker profits . . builds customer acceptance. For details ask your jobber or write us.

John BEAN

VISUALINER

DEPARTMENT 1 C

JOHN BEAN MFG. CO.

DIVISION OF FOOD MACHINERY CORPORATION

LANSING 4, MICHIGAN

WHEEL ALIGNERS AND CORRECTION TOOLS...WHEEL BALANCERS AND BALANCING TOOLS...WEIGHTS...STEAM CLEANERS...CAR WASHERS

Greater ASI Show

(*Continued from page* 88)

ciation held its annual meeting at the Ambassador Hotel with the theme of all of its sessions "Brace Yourself for Tomorrow." Charles S. Rogers, P & D Mfg. Co., Long Island City, was elected president; E. M. Sheehan, Motor Parts Co., Pittsburgh, senior vice-president, and Charles Crowder, Van Norman Machine Tool Co., Springfield, Mass., junior vice-president.

Motor and Equipment Wholesalers Association held its meetings at the Claridge Hotel. Franklin P. Gaul of Gaul, Derr & Shearer Co., Philadelphia, elected president last May, presided and no new officers will be named until a meeting of directors in May, 1947.

Motor and Equipment Manufacturers Association held its meeting at the Traymore Hotel in the form of an annual membership dinner. Newly elected officers introduced at the dinner were Fred G. Wacker, Ammco Tools, Inc., North Chicago, president; B. G. Cochrane, Casco Products Corp., Bridgeport, vice-president; A. E. Keough, John T. Stanley Co., New York, secretary, and C. P. Brewster, K-D Mfg. Co., Lancaster, Pa., re-elected treasurer.

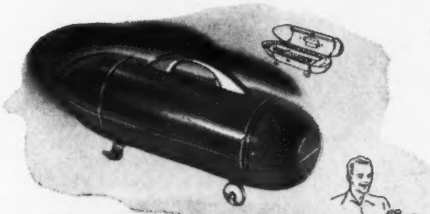
The service trade will enjoy a more restrained selection of entertainment and refreshments at jobber meetings and clinics during 1947 if the recommendations of members of the Automotive Advertisers Council are followed. Members of both MEWA and NSPA heard presentations by members of the council which urged greater concentration on informative material, better selection of subject material and a general improvement in meeting programs if jobbers are to draw their customers to these affairs.

Those members of the A.A.C. who took part in these presentations were: T. Faxon Hall, Walker Mfg. Co.; Walter Kirkpatrick, Wilkening Mfg. Co.; Don L. Hague, E. I. du Pont de Nemours and Co., Inc.; Gene P. Robers, The Weatherhead Co.; George W. Stout, The Perfect Circle Co.; C. C. Tapscott, McQuay-Norris Mfg. Co.; J. F. Apsey, Jr., Black and Decker Mfg. Co.; H. M. Wirtz, Toledo Steel Products Co.

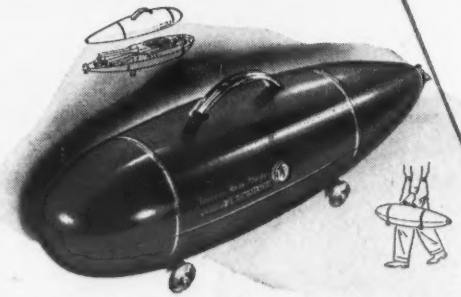
BLACKHAWK . . .

Birthplace of Equipment Styling

THESE ILLUSTRATIONS REVEAL STARTLING NEW PRODUCTS



Truly a tradition-smashing Wrench Chest — for tradition-smashing Blackhawk Nugget Socket Wrenches! Carry it to the job—roll it while on the job. "Scoop type" bottom for easy withdrawal of wrenches.

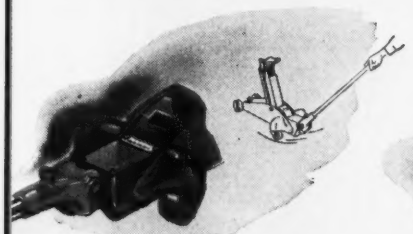


Something really new in equipment design! Shaped like a torpedo—this metal case holds the postwar 2-ton Bantam Porto-Power and attachments.

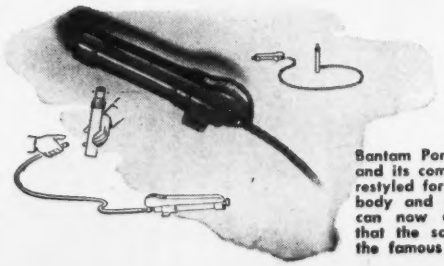
Extra beauty — amazing practicality! Blackhawk's revolutionary double-duty NUGGET Wrenches have this new handle design. It fits the hand — wipes clean. Sparkling chromium finish, no ugly cross knurls.

New 30-ton "jug-size" jack is a powerhouse for heavy shop jobs but styled to the smart appearance of all Blackhawk Jacks.

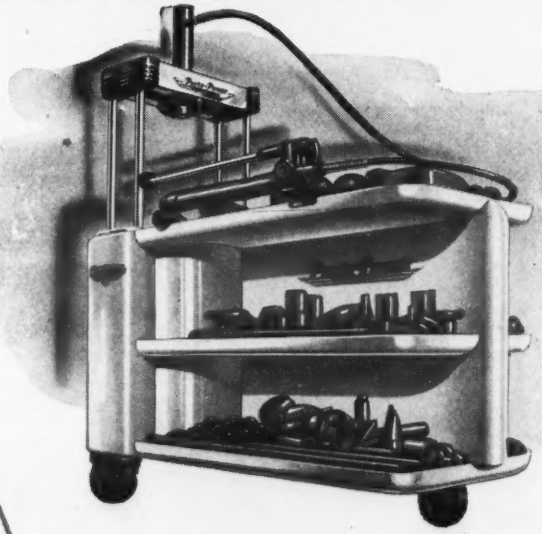
All the new designs revealed here are in harmony with advanced styling as represented in Blackhawk's famous 3, 5 and 8-ton Jacks.

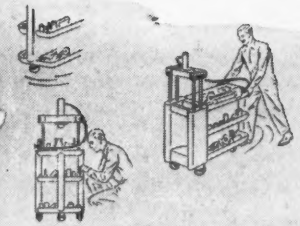


Addition of rear swivel casters creates greater utility for this new Curb Jack. These casters (while as sturdy as those used on larger models) actually add to the smart design of this jack.



Bantam Porto-Power is back — and its compact pump has been restyled for even faster work on body and shop jobs. The ram can now quickly uncouple so that the same pump can serve the famous Wedgie.





New Postwar Deluxe Porto-Power* with the portable pylon stand combines extra utility and startling beauty. Enlarged assortment—convenient, easily accessible shelves—swivel front caster—non-metallic wheels—white, chromium-trimmed stand for greater appearance-merchandising and an endless list of other outstanding features, create many new advantages for this famous all-purpose hydraulic shop tool.

* *Trademark Reg. U. S. Pat. Off.*

Traditionally, Blackhawk has given you equipment styling to help *merchandise* your shop and workmanship. And, now, Blackhawk continues its policy — as shown here. These and all other products in the big Blackhawk line give you that extra *smartness* and *versatility* that make you and your shop king of them all! Your Blackhawk Jobber will bring you announcements of all these startling new developments.

BLACKHAWK MANUFACTURING COMPANY • *Milwaukee 1, Wisconsin, U. S. A.*

BLACKHAWK

WRENCHES • HAND JACKS • SERVICE JACKS • PORTO-POWER

Pop Plugs A Leak

(*Continued from page* 47)

as—as—"

"Tight as a Scotchman drinkin' free liquor," said Pop.

Larry did not smile. "And the water pump was okay, too," he went on. "So it has to be the head gasket."

"Oh," said Pop, rocking his head slightly. "Guessin' again."

"It can't be no place else."

Pop's mouth was set in a grim line. He pulled out his big pocket watch. "Well," he said, with an air of resignation, "there ain't much hope of gettin' the work done now if you don't even know what you're gonna do." He replaced the watch. "But I want that car by noon tomorrow, do you hear?"

"I ain't deef," said Larry. "You'll get it."

Tommy heard Pop walking toward the Chrysler, then stop. After a few minutes, he started off again and Tommy heard his footsteps receding toward the shop office. Tommy could imagine him pulling thoughtfully at his ear.

Rolling the creeper from under the Buick, Tommy got to his feet and said to Larry: "Want to start taking the head off the Chrysler now?"

"No. We'll have plenty of time tomorrow."

Tommy was the first one in next morning. After putting on his coveralls, he went over to the Chrysler and opened the hood. He was frowning at the engine when he heard Pop's step behind him.

"Figured it out yet?" asked Pop.

"No," said Tommy. "I was only wondering whether I ought to start taking off the head before Larry gets in."

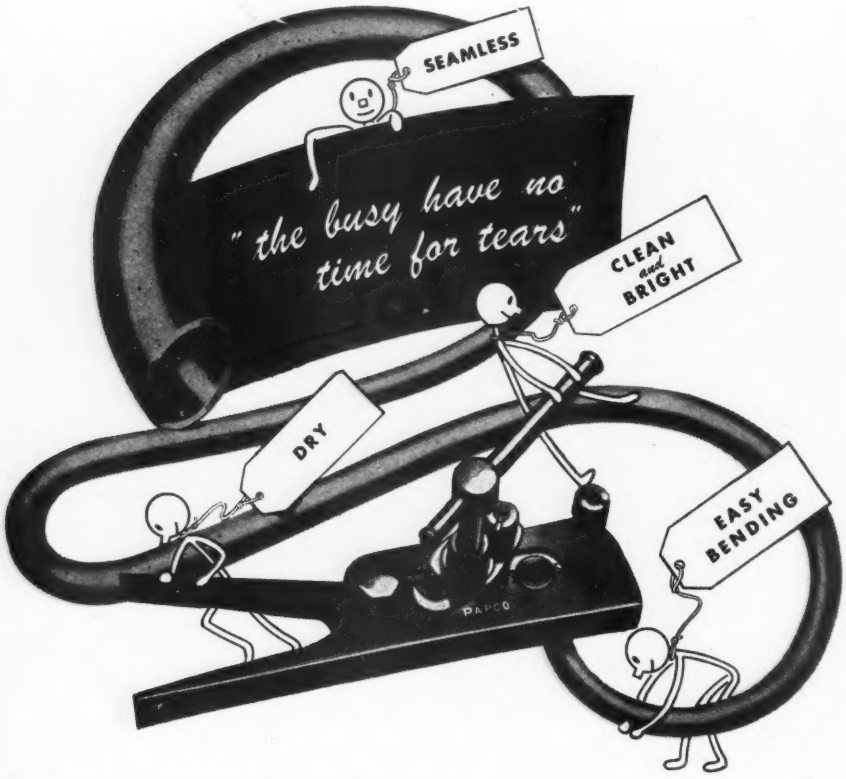
"If Larry ain't in soon, that engine head ain't the only one that's comin' off. But before we start twistin' any nuts, maybe we ought to look it over careful."

"I don't think Larry and I missed anything."

"Maybe not. But I been thinkin'. Hand me that light."

Tommy brought a trouble lamp from the bench and turned the switch. Pop took it and pushed

(*Continued on page* 103)



Everyone at Penn is bending forth every effort to speed up production so that we may meet the increased demand for more 'Superior' tubing. We regret delayed deliveries of Penn 'Superior' tubing and appreciate your patience and cooperation in placing orders early. 'Superior' tubing is perfect for your needs—better four ways; clean and bright, dry, seamless, and easy bending. 'Superior' tubing is worth waiting for. Plan now to use 'Superior' for all your tubing requirements "after the pressure is off".

PENN TUBING IS "SUPERIOR"

FASTEST FLARING TOOL YOU EVER USED

Ready for immediate delivery

The Papco #400 is not only the fastest but the easiest and most efficient flaring tool ever developed. Through popular demand increased production has enabled us to effect prompt deliveries on Papco #400. You will want to know all about it—write for latest Papco bulletin today.

PENN BRASS & COPPER CO.
ERIE, PENNSYLVANIA • *Phone 35-111*

"This guy couldn't be satisfied with a regular heater. He wants an open fire place."

"Ten Strike"

It's the *easy* way to sell—

Oil Filters and Elements

Oil changes

Here's all there is to do:

Wipe the dipstick on an AC Oil Test Pad. Show the dirty Pad to the customer, while you're showing him the oil level. (The dirt, grit, and sludge stand out plainly.) Then, recommend that he have an AC Oil Filter installed, or his element replaced, because dirty oil clogs ring slots, gums valves, and accelerates carbon formation. Clean oil saves engine wear and repair expense, and AC Oil Filters and Elements keep oil clean.

You'll make a "strike" nearly every time if you use AC Oil Test Pads, regularly, to sell AC's high efficiency Oil Filters and Elements.

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

AC Oil Filters

HOW TO GET AC OIL TEST PADS } **Register as an Official AC Oil Filter Service Station with Your AC Wholesaler**

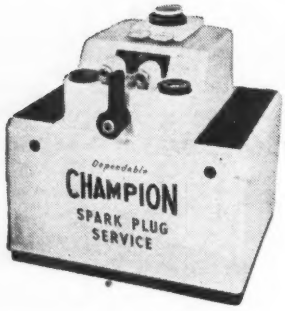
FOR GREATER PROFITS STOCK AND SELL

AMERICA'S FAVORITE

The one brand of spark plug which will return greatest profits on your stock investment, is the one which will give you greatest *volume* and *turnover*.

If there is one spark plug—and there is—which enjoys outstanding consumer acceptance, and consistently stands alone, as the preferred brand, then it seems obvious that this is the spark plug for you to stock and sell. This way you are automatically assured of maximum *volume* and *turnover* and, therefore, *maximum profits*.

Consistently, year after year, the outstanding performance and dependability of Champion Spark Plugs have earned for them leadership and preference by every conceivable category of user. Recent impartial brand preference surveys by the score, made in all parts of America and in specialized vocational groups—among motorists urban and rural, farmers, bus and truck operators, motor boat owners, etc.—re-affirm the predominant preference for Champion Spark Plugs. The name Champion is more than a name—it is a fact, and one which has made Champion "*America's Favorite Spark Plug.*"



The new Champion Series 500 Service Unit ... the finest, most advanced cleaner and tester ever offered—efficient, attractive, profitable!

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

Listen to the CHAMPION ROLL CALL, Harry Wismer's fast sportscast every Friday night, 9:55 EST over ABC network.

CHAMPION

SPEED UP YOUR SERVICE DEPT. with Electronic Intercom

EXECUTONE eliminates time lags . . . saves untold hours of costly labor and keeps customers happy with prompter delivery of service jobs.

Instantly, without going through your office switchboard, you can talk to shop men, assign jobs, check work schedules, or order needed parts. You can even talk with mechanics while they are working under cars!

2 stations for as little as $61. Systems with up to 100 stations are available.

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UNCONDITIONALLY GUARANTEED. Over 90,000 guaranteed installations are your assurance of trouble-free performance and dependability. EXECUTONE Systems are individually engineered to your requirements. Installed and serviced by factory-trained specialists in principal cities.

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I am interested in data on EXECUTONE.
☐ Please send literature.
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"Let Freedom Ring!"

With the remaining functions of CPA, OPA, and OWMR now in the hands of the Office of Temporary Controls for eventual liquidation, the end of the wartime regulatory agencies is in sight.

The Wage Stabilization Board officially expires on Feb. 24.

CPA's powers will expire on March 31, with the end of the Second War Powers Act. Other wartime nuisances, such as the heavy excise taxes, will be acted upon speedily by the new Congress.

While some of CPA's orders will go out of the window before March 31, others will remain until the end. One of these is the order limiting exports of trucks and automobiles.

Mailing of the export letters in December to all manufacturers setting export quotas for the first quarter of this year indicates clearly CPA's intention to hold onto this order.

In fact, there is a possibility that this and a few other powers will be transferred to other agencies by Congress before the expiration of the broad powers embodied in wartime legislation. Other commodities on which controls might be retained are tin, rubber and some building products.

The Greatest Good For the Greatest Number

Motorists may soon have to be prohibited from driving anywhere they please just as they are now limited by speed and by other regulations, George Conrad Diehl, past president of the American Automobile Association and president of the Automobile Old Timers, said recently in analyzing the nation's traffic congestion problems.

"The main purpose of roadways is to permit the passage of people and goods," Diehl said, "and when the attempt is made to crowd in too many vehicles, all traffic is slowed up with the result that few vehicles per hour are actually moved."

Diehl said the number of passengers using the streets can be greatly increased by substituting public transit vehicles for private automobiles. "Street cars, trolley coaches and gas buses can carry 60 or more passengers. The average privately owned motor vehicle carries approximately three persons, thus one public transit vehicle can take the place of 20 individual cars."

The "greatest good for the greatest number," should be applied to the traffic problem, Diehl said, and pointed out that often the automobile user himself would be materially aided through public transportation and restrictions.

For immediate traffic relief, Diehl urged:

1. During certain hours, prohibit private passenger cars from entering specified areas. Increase the number of public transit vehicles to carry conveniently extra passengers.

2. Prohibit trucks from leaving or entering congested areas at certain hours.

3. Try to carry into practical operation the theory that traffic should be distributed from the circumference or the periphery of a city rather than from the center of congested areas.

Pistons · Piston Pins
Piston Pin Bushings
Piston Pin Set Screws
Piston Pin Lock Rings
Valves · Valve Keys
Valve Guides
Valve Springs
Expansion Plugs
Cylinder Sleeves
Cylinder Sleeve Assemblies
Water Pumps
Water Pump Parts and Packing

Allied Accuracy in design, materials and construction, builds more stamina and more miles into water pumps and pump parts. Allied builds these qualities into the most complete line of pumps and repair parts available from any source.

Accuracy with a capital "A"... for Allied

● No matter how well-engineered any part may be, or how much research has gone into its development, it all fails of its purpose unless that part can be produced, *accurately* and in the quantity needed.

The production facilities and manufacturing capacity of the great plants which produce Allied Motor Parts are unsurpassed in the motor parts industry. You can rely on Allied to supply you with parts which equal or better the parts they replace—to maintain the *accuracy* that helps you in your job . . . Your Allied jobber is headquarters for fine motor parts.

ALLIED MOTOR PARTS COMPANY • Detroit 1, Michigan

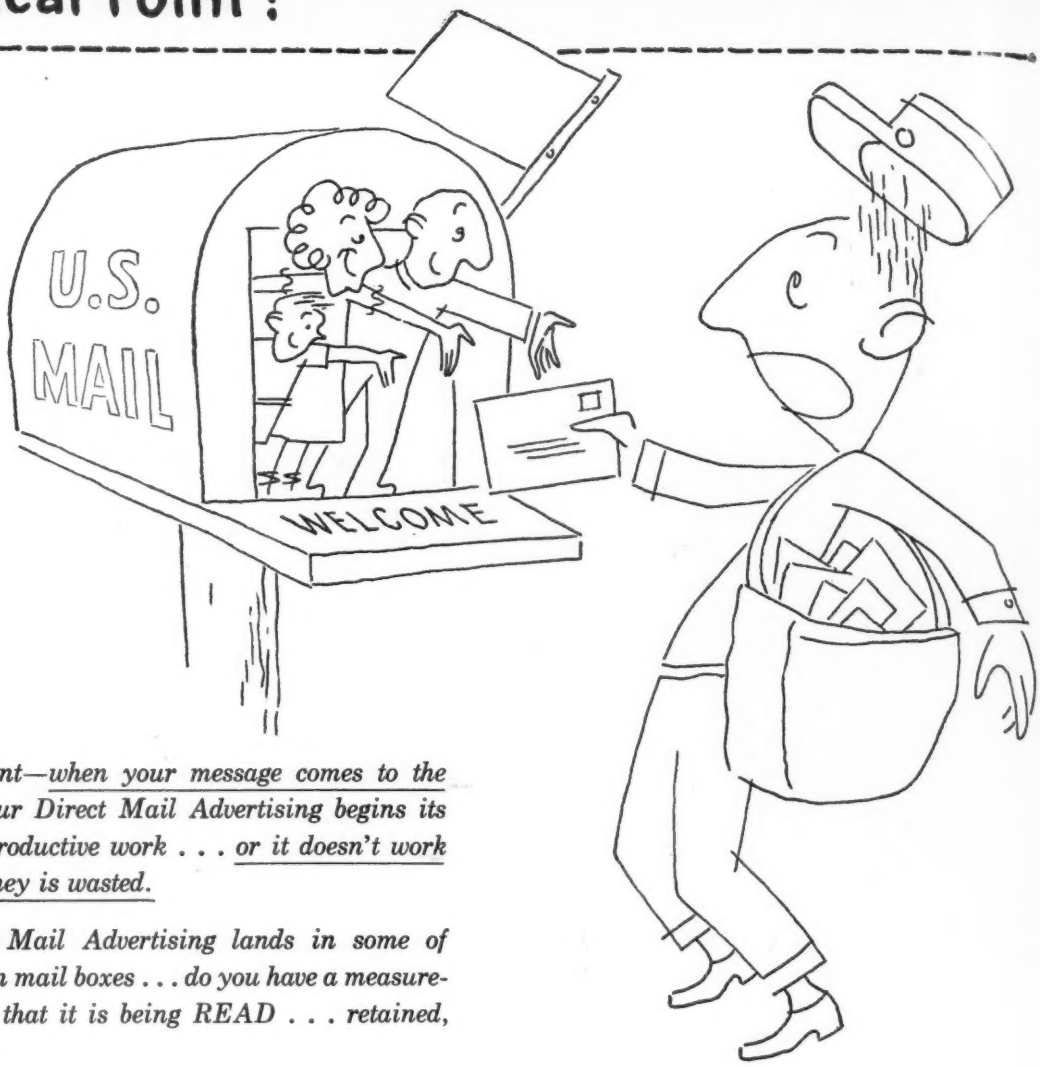
N·A·P·A National Automotive Parts Association Assurance of Quality

Allied Motor Parts are quickly available from NAPA Jobbers everywhere. Master stocks maintained in 38 NAPA Warehouses

When the Motor is Down Build it Up with—

Allied MOTOR PARTS

The Critical Point!



At this specific point—when your message comes to the family mailbox—your Direct Mail Advertising begins its extended chain of productive work . . . or it doesn't work at all, and your money is wasted.

When your Direct Mail Advertising lands in some of America's 38 million mail boxes . . . do you have a measurement to assure you that it is being READ . . . retained, and ACTED ON?

Continuous READERSHIP studies of Polk-created and Polk-distributed Direct Mail Advertising show *you—and us*—how well your Direct Mail Advertising is doing its work. Such continuous studies—plus 25 years of accumulated experience in creating Direct Mail Advertising for America's greatest industries—put R. L. Polk & Company out front as the nation's foremost specialists in *the most productive of all advertising media.*

Polk facilities are *complete* . . . consultation, research, planning, creating, producing and distributing. The people of America—*your selected customers and prospects*—are in Polk's list files. Polk annually compiles and makes available the national list of passenger automobile and truck registrations. Production plants and branches—in seven strategic cities—are staffed to handle distribution of more than two million mailings daily.

R.L. POLK AND COMPANY *Direct Mail Advertising Division*

BRANCHES AND PRODUCTION PLANTS:

NEW YORK CHICAGO PHILADELPHIA

CLEVELAND ST. LOUIS CINCINNATI TRENTON

Headquarters: Polk Building
431 Howard Street
Detroit 31, Michigan

Pop Plugs a Leak

(*Continued from page* 96)

his head under the hood. He studied the hose and pump connections carefully. When he withdrew his head, his face was a study in perplexity. He handed the lamp to Tommy. Then a little stiffly he got down and looked under the car.

"Oh, oh," he said.

Tommy dropped quickly to his knees.

"There it is," said Pop.

"What?"

"That puddle."

Tommy saw that the water covered a large area. "Where can it be coming from?" he asked.

"I don't know exactly," said Pop, getting to his feet. "But I got a hunch." He reached under the hood and put his hand down behind the block. When he took it out, the palm was covered with muddy rust.

Tommy's eyes widened in surprise. "What's that?" he asked.

"I don't know why nobody thought of it before," said Pop, wagging his head over the rust smears.

"But where—" persisted Tommy.

Pop wiped his hand. "From the freeze plug," he said.

"I never thought of that."

"And neither did Larry," said Pop. "And the reason is, the plug ain't in plain sight. On this job and a few more there's one in the back of the block. And there ain't hardly room enough between the block and the dash to get your hand down, much less see it. Come into the office and I'll show you a diagram in the manual. You can't see through the block."

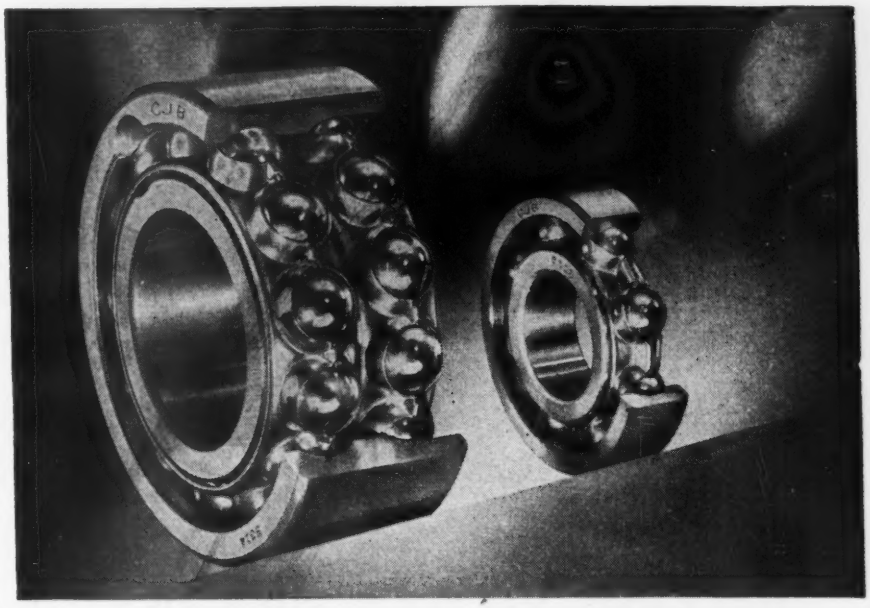
"I guess what fooled Larry and me was, it's something you don't see very often."

"Could be," said Pop. "But that ain't the way a good repairman operates. He's always got his ears and his eyes open for odd possibilities. It ain't much of a trick to think up easy answers. The guy who can think up the hard ones gets some place—and saves himself a lot of useless work.

"Take this job. You fellows checked the first things you thought of. And you didn't find nothin'. Then Larry made a pretty good guess about the gasket. In that case he could have made a rough check by running the engine and looking to see if any water was coming out of the exhaust and also, checking to see if there was any water in the oil pan. But it's

(*Continued on page* 104)

"I've been evicted."



That Significant and Comforting

SILENCE...

The only message you ever get from CJB Ahlberg Bearings is SILENCE . . . a silence that tells eloquently of smooth efficiency, of "troubles that do not happen".

The name AHLBERG stands for a complete, all inclusive service on bearings, ball and roller—

- LIGHT WEIGHT
- HEAVY DUTY
- RADIAL
- THRUST LOAD
- SELF ALIGNING

For prompt, competent help on bearing problems, talk to an Ahlberg jobber.

AHLBERG BEARING COMPANY

3028 WEST 47TH STREET
CHICAGO 32, ILLINOIS

Pop Plugs a Leak

(*Continued from page* 103)

a whole lot easier to stick your hand down behind a block than it is to remove a head, ain't it?"

"I should say it is. But," added Tommy, "it's going to be a tough job getting that old plug out and putting in a new one. It's pretty cramped back there."

"You'll have to go through the dash with a sheet-metal drill," said Pop. "Then you drive a sharp-pointed tool into the old plug and pry it out. All you have to do then is cover a new plug with red lead and drive it in."

"I'll get right after it, said Tommy. "And, if another leak like this ever comes in, I ought to know how to handle it without running to you for help."

Pop chuckled. "I don't mind," he said. "I'm kind of an expert on leaks. I learned how to take care of 'em when I was only four years old and still in short pants."

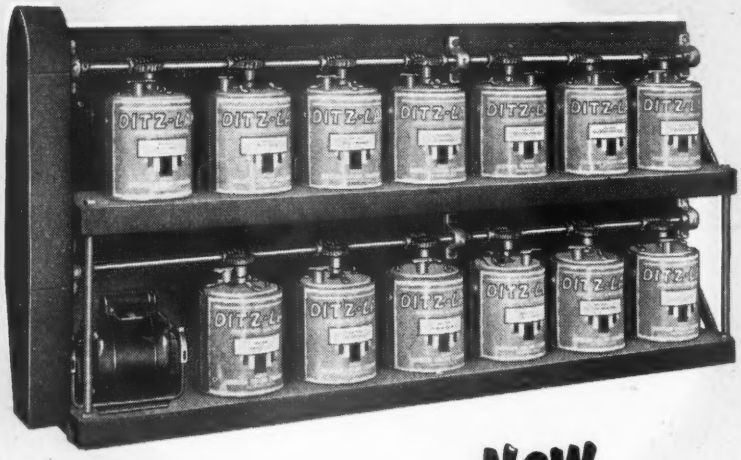
Tommy looked at him in disbelief.

"Learned it from my father," said Pop. "Every time my mother made him hold my baby brother, he always put a cushion on his lap first."

Natural Rubber Continues Reign of Popularity

The trend toward use of natural rubber in tires continues unabated. CPA now permits from 67 to 100 per cent natural rubber in the various size truck and bus tires. On the industry side, the trend is largely due to price, since there is only a four cent spread between the price of synthetic and natural. Should the spread become larger by either a reduction in the price of synthetic or an increase in the price of natural the trend would again be back to synthetic.

Congress will be asked to set a rubber policy and continue some controls when the members return to Washington in January. Such action should decide the future course of both natural and synthetic rubber. There seems to be little doubt that at least a portion of the war-built synthetic industry will continue in operation, as a protection against war and insulation against a rise in the world price of natural rubber. On this basis, it seems apparent that synthetic rubber will continue to be used in passenger car tires and other rubber products.



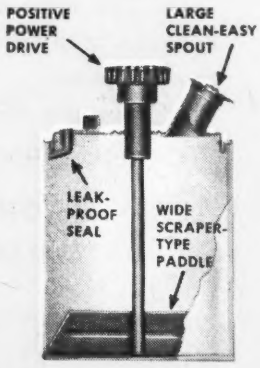
New

DITZLER POWER AGITATOR
FOR FAST, EFFORTLESS COLOR MIXING

In the few minutes while empty can, label and weighing scale are being prepared, this machine agitates thoroughly all base colors required for any color formula—eliminates the drudgery of hand agitation, and in the course of a day's mixing saves many valuable hours.

Positive non-slip drive, tight-sealing quick-change cover, large clean-easy spout, wide scraper-type paddle, instant changing of cans without power shut-off, simple, safe, efficient.

This new machine which is available in 6 or 7 can units has been years in the making and is now in limited production.



DITZLER COLOR DIVISION, PITTSBURGH PLATE GLASS CO.
8000 WEST CHICAGO AVE., DETROIT 4, MICHIGAN

DITZLER

"Be a sport yer honor. Double time or nothing."

GET OUT OF THAT BUGGY

IF YOU WANT TO MAKE MONEY

Way back yonder folks thought they JUST MUST vulcanize a tube when they got a puncture. *Then* . . . more than 20 years ago Bowes "Seal Fast" proved that vulcanizing was not necessary . . . proved that **BOWES "SEAL FAST"** ***Chemical Process*** **METHOD** for tube repair was ***QUICKER . . . BETTER.***

Endless thousands of dealers have been using the **BOWES "SEAL FAST"** ***Chemical Process*** **METHOD** for tube repair over this 20 year period. No muss . . . no fuss . . . no expensive equipment. It's quick, easy and . . .

STAYS PUT ON SYNTHETIC OR NATURAL!

ARE YOU STILL IN THE HORSE AND BUGGY STAGE?

OK to vulcanize tubes . . . if you are still in the horse and buggy stage . . . but . . . it's quicker, better and more profitable if you use the Bowes method of tube repair. For more than 20 years **BOWES "SEAL FAST"** ***Chemical Process*** **METHOD** for tube repair has stood the test of time . . . and our big, national advertising campaign in The Saturday Evening Post, Collier's and Farm Journal, reaching millions of readers directs motorists to those dealers who display the Bowes "Seal Fast" dealer sign.

BOWES SEAL FAST

TIRE REPAIR SYSTEM

BOWES "SEAL FAST" CORPORATION • INDIANAPOLIS 7, INDIANA

Planning Building Plans

(*Continued from page* 53)

ciency by grouping equipment necessary for specific kinds of work and increases cleanliness and orderliness by making each man responsible for work area assigned him. Over-all impression is better on customer, who feels that his work is being done by specialists. In this connection, Ford divided the ideal service floor into percentages of space to be allocated to various departments, estimated the percentage of sales that each department should expect.

	Space	Sales
Lubrication	10%	8%
Quick Service	28%	34%
Major Repairs	32%	23%
Wash	7%	4%
Body and Paint	23%	31%

Special equipment, specifically designed to assist in the work of each department quickly and accurately, is desirable not only because it increases efficiency, but because it makes a strong impression on the customer. For this reason, deluxe units, such as those designed for engine analysis, wheel alignment, brake jobs, etc., should not be hidden in back rooms or remote shop corners. Greater returns will be obtained if such equipment is conspicuously displayed in such a position that the customer can watch it in operation or even while he is getting gas. The U. S. is a gadget-minded nation.

Good light and color planning is also indicated for the profitable shop. Modern color researchers have clearly demonstrated that the carefully planned use of color and light goes far to raise worker efficiency, reduce accidents, cut absenteeism and raise morale, as well as to provide an attractive setting for the merchandising of products and services. November MOTOR AGE, in an article on color, gave broad outlines to guide the shop owner in choice of suitable tones, recommended warm tones for cold locations and vice versa, described use of restful background colors for walls and equipment, eye-catching colors for moving and critical parts.

Heating, ventilation, drainage,

(*Continued on page* 108)

Write for this....

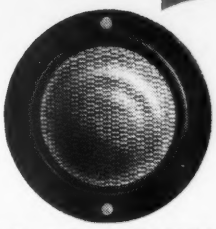
. . . complete catalogue on automotive bearings and bushings. It lists and describes a complete service for all popular makes of American cars and trucks. This includes such items as main, connecting rod and camshaft bearings. Piston pin, starter and generator, steering knuckle, clutch pilot, water pump, distributor and spring bushings. Every item in the line is precision finished to exact specifications.

While many of the items listed are not available at present, deliveries are getting better every day. This catalogue is offered FREE . . . write today.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
455 S. MILL STREET NEW CASTLE, PA.

"Where did that woman you were out with last night get the nylons?"

make Light work for you!



Model No. 217 ARROW REFLECTOR

Model No. 8
ARROW DIRECTIONAL SIGNAL

. . . with ARROW's Complete Line of Legally Approved Lighting Equipment

From bumper to tailboard, Arrow provides some of the finest lighting equipment on the market—equipment that rates a well-earned okay from performance-demanding fleet operators. There is an Arrow product for every lighting requirement on every car, truck, bus or tractor—well engineered, sturdily built, designed to stand up under years of hard use. Put light to work for you profitably . . . sell Arrow for *Safety After Dark.*

SAFETY ARROW DEVICES

ARROW SAFETY DEVICE CO., MT. HOLLY, N. J.

SAFETY AFTER DARK

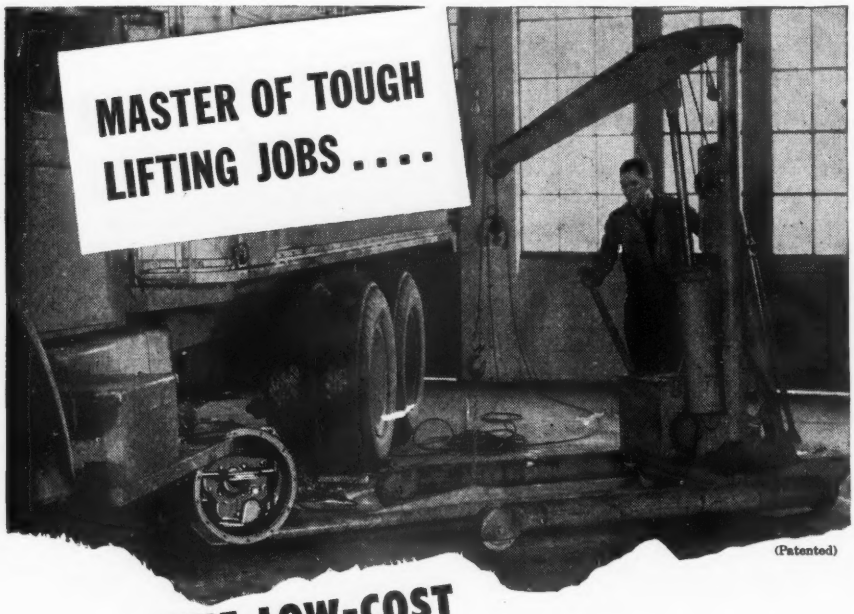
Planning Building Plans

(*Continued from page* 106)

are all dependent upon climate, location and type of structure. Some advanced shops, for instance, are installing heating pipes beneath the service shop floor to combat the damp cold of concrete . . . others are employing new type hot air blowers, while some are planning on complete air conditioning installations. Old-type closed floor drains, with small, far-apart, inadequate openings, are being replaced with open drains, grating covered, installed in properly sloped floors to carry off water. All phases of shop construction, in short, are advancing in keeping with the latest trends in industrial design.

One point which is receiving considerable emphasis by authorities on building layout is the provision of adequate "low overhead" parking space for customer's cars which are waiting their turn in the shop or on which the work has been completed. By providing ample outside parking of that sort permits active utilization of all the shop space by cars that are in the process of being serviced. Formerly a lot of space within the shop was used for storage. By using it for maintenance, profits increase.

Briefly summed up, the profitable shop should be: Strategically situated to attract the greatest possible number of patrons; so designed as to give an immediate impression of modernity and efficiency; built around a sound estimate of potential work.



THE LOW-COST

RUGER *Hydraulic Floor Crane*

FOR PICKING an engine right out of a chassis, removing and replacing heavy transmissions, transporting engines, transmissions, differentials and other heavy assemblies to cleaning and inspection . . . for these and dozens of similar tough lifting and handling jobs the Ruger is literally "made to order."

There's no other like the Ruger . . . it gives you advantages both of floor jack and overhead crane plus advantages neither can offer. For the Ruger reaches out, over, under . . . picks up, lifts, lowers, carries heavy loads . . . goes wherever you can push a floor truck.

The secret of Ruger efficiency is its simple, effective combination of hydraulic power and cantilever boom. That also explains why the Ruger is so easy and safe to operate . . . only two controls, pump lever and release valve . . . anyone can use a Ruger.

Ruger Hydraulic Floor Cranes are built in 1-ton, 2-ton and 3-ton sizes. Write for bulletin and complete description to nearest address below.

RUGER *Equipment Co., Inc.*

Load Lifting and Handling Devices

408 Leader Bldg.
Cleveland 14, Ohio

P. O. Box 3821
Portland 8, Oregon

Wagner Catalogue

A handy pocket-size catalogue on brake lining, clutch facings and rivets is now available from Wagner Electric Corporation. This new catalog, known as BU-128, contains application data on 1946 model cars and trucks as well as older models.

Cars and trucks by years and models are listed giving their requirements in sets and blocks and clutch facing. Separate sections of the book are devoted to list prices, numerical listing of CoMaX sets and blocks, and CoMaX drilled and countersunk sets.

Free copies of the new catalog BU-128 can be obtained by writing to Wagner Electric Corporation, 6400 Plymouth Avenue, St. Louis 14, Mo.

"She ought to blow out those thirty candles this time. She's had fifteen years' practice."

INCREASE *Sales and Profits* with ignition-fritz

TRADE MARK

FOR { Auto Owners, Mechanics, Truck Drivers, Farmers

SELLS ON SIGHT WITH THIS SELF-SELLING *FREE DISPLAY* FOR WALL OR COUNTER

8 BIG FEATURES

in one handy pocket tool

- Tests for weak, fouled, or shorted spark plugs
- Shows weak or strong spark separately
- Locates ignition cable insulation breaks
- Checks for distributor head electrical leaks
- Finds radio interference sources or static electricity
- Pocket clip for handy carrying
- Easy-to-use spark plug gap gauge
- Built-in Valve Core Remover

ONLY **49¢** LIST

LITTELFUSE FIRST IN CIRCUIT PROTECTION *Incorporated*

4779 N. RAVENSWOOD AVE. CHICAGO 40, U. S. A.

SWITCHES • CIRCUIT BREAKERS • FUSES, MOUNTINGS & ACCESSORIES • NITE-T-LITE • SWITCH-LITE • IGNITION-FRITZ • NEON INDICATORS

Stock Control Saves Profits

(*Continued from page* 48)

products in repairing his car, you have double trouble. You have lost that customer and he will undoubtedly spread far and wide his reason for blackballing you.

In actual practice most repair shops do most of their buying from wholesalers who send salesmen around periodically to take orders. Often the jobber is not a high-pressure boy intent on selling everything in his book, and the repairman arranges some sort of system with him by which he checks the shelves and keeps the stock at whatever level the repairman desires. Some small repair shops worked with the jobber by using the Old Barrel Method.

When they took a part from the shelves they removed it from the box and tossed the box in a barrel. When the jobber came to the shop he simply picked the empty boxes out of the barrel. He then knew exactly what had been used since his last visit and he restocked the shelves accordingly. Another method more commonly used today is a Want Book chained to the door of the Stockroom. When the repair man comes out with a part in his hand he marks down in the book what he took and when. Occasionally shops combine the methods to get a double check. Large shops employ a complete stock control system, including stock clerk, for all parts, but our experience has suggested that the man who puts the part in the motor would cut off his own hand rather than fill out a Stock Control Card.

If cooperation between the shop and the jobber is close, reordering becomes a minor problem. The jobber will keep your shelves right up to the level you set. But much of your purchasing will be done through different sales outlets, and for these the Want Book and the Old Barrel are not satisfactory and a Stock Control System is necessary. A supply of purchase order blanks, obtainable at any large stationers are necessary in any shop. In the spaces provided on these blanks you write in your name, the name of the wholesaler from whom you are purchasing, the item desired, the number desired, and the price. The duplicate is kept at your

(*Continued on page* 112)

PUT BOTH THESE "SEALS" IN YOUR ACT AND MAKE AN EXTRA PROFIT!

Here's the *star* attraction that gets *top billing* with profit-minded dealers all over the *Automotive Circuit.* For almost 50 years Schrader Valve Caps and Cores have been giving outstanding performances at every *show*... bringing in a heavy *take* for all live-wire dealers who *book* them.

Schrader keeps this Cap and Core *team* in the public eye with a big *build-up* in consumer magazines—and the *act* more than lives up to its reputation . . . by *seal*ing the air in tires and making them last longer for millions of users.

For faster turnover put your new, colorful Schrader Cap and Core display packages in a prominent place.

"For goodness sake, show papa how to deflate the bubble gum."

Van Dorn Portable Electric
SANDER

Power

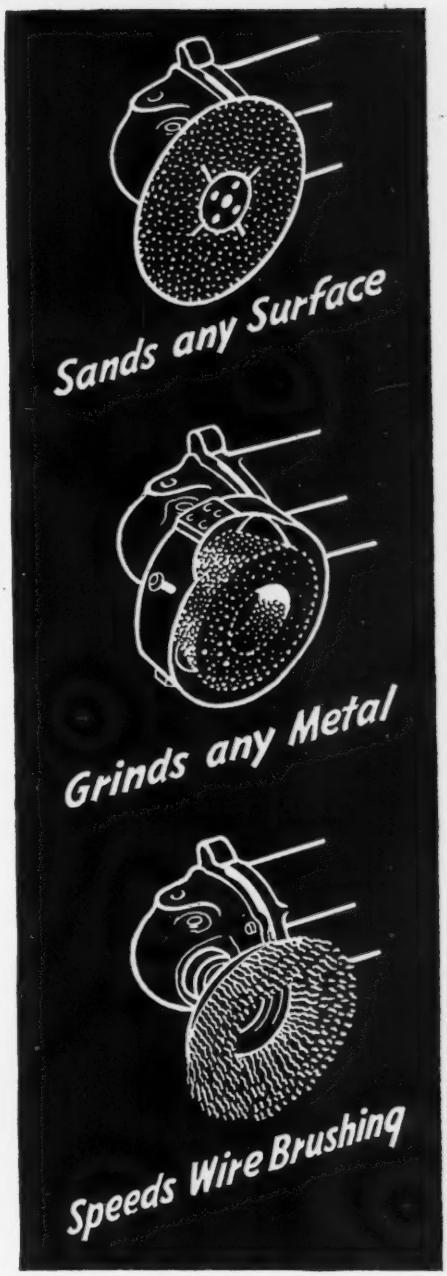
for Quick Clean-ups that Build Profits!

Van Dorn Portable Electric Sanders are packed with power to make short, profitable work of a wide variety of automotive clean-up jobs!

With "Whirlwind"* Wire Cup Brushes, they remove old paint, rust, road tar, oxidation, light weld spatter, grease, carbon—clean the chassis and under fenders. And the same tools drive abrasive discs for sanding and smoothing fenders, body panels and any other surface—drive saucer or cup-type grinding wheels for smoothing welds, removing metal, cutting off old rivets, bolts and studs.

Ask your nearby Van Dorn Distributor for complete information on these versatile tools and for help on any tooling problem. For details on over 100 other Portable Electric Tools for profitable automotive work, write for your free copy of our catalog to: The Van Dorn Electric Tool Co., 727 Joppa Road, Towson 4, Maryland.

*Trade Mark Reg. U. S. Pat. Off.



FOR POWER SPECIFY

"Van Dorn"

(DIV. OF BLACK & DECKER MFG. CO.)

PORTABLE ELECTRIC TOOLS

Stock Control

(*Continued from page* 110)

shop. When the goods are delivered, you check them against your copy and against the wholesalers invoice to determine (1) that you actually received the exact part you ordered, (2) that you were charged the correct price. Errors of both kinds occur in the best of places. It is good business to check carefully.

Stockroom bins and shelves should be arranged with an eye to the future. Be able to find what you're looking for. Lighting must be adequate. Parts often used should be in easily accessible places. Absolutely nothing should be stored behind next winter's coal because "you have no need for it now." Adequate facilities should be available to permit every item in a place of its own. Time spent sorting stock while a job waits is really money spent too. And when inventory time rolls around everything should be where it can be checked without getting a chair to put on the box on the barrel to see the top shelf.

It is surprising how many repairmen lose money on stock which they have permitted to rust or deteriorate. Material, particularly supplies, should be arranged so that the first supplies purchased are the first ones used. If you buy a part, then can't sell it and can't use it—well, that's a heck of a way to run a business.

The last suggestion on saving money in the stockroom is this. Put a door on it, with a lock and key. In a very small repair shop in the country good friends drop in. They need odd supplies to do a quick job. They are strictly honest, but it's easy to forget exactly how much they borrowed yesterday and in other ways. Things disappear. Repair shops operate on a rather close margin of profit to go in for uncounted charity.

Another reason for the lock and key is that after you yourself have checked your purchases against the material which you have used in a month, you will be astonished to find that probably you are either a crook or a philanthropist, depending on the point of view. If you don't make a special effort to control exactly what you take from your own stockroom you will find that you continually forget to add on to repair bills various small items which you have drawn in the hurry of working. Thus you have given the customer a few items which must eventually be

(*Continued on page* 114)

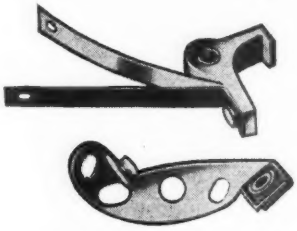
Quality of Performance is What Counts!

Split-second timing is the secret of making difficult feats of daring look easy. Quality of performance stamps this aerial act a product of perfection.

Making Ignition Parts to fit perfectly, to function correctly with every other part of the Ignition system is a matter of *"know how."* With 43 years of ignition engineering and manufacturing experience to its credit, Wells can *insure* that all of its products will give quality of performance.

You will like to work with and install Wells Ignition Parts because you save time and money when motors tune-up *just right.* Ask your jobber for guaranteed Wells quality.

WELLS MANUFACTURING CORP.
Fond du Lac, Wisconsin



Rebuild With Confidence

Rebuilders of distributors for V8 Ford prefer Wells Contact Points because they *line-up* right, saving time and labor; and because they *function* right.

WELLS IGNITION
Quality Tells -- Demand WELLS

"Don't you have anything that's unfit to read?"

TAKE A TIP FROM ONE WHO SPEAKS FROM EXPERIENCE

For Better Brakes..

REMEMBER YOUR 3 R's

1 REPAIR WITH GENUINE Wagner LOCKHEED HYDRAULIC BRAKE PARTS

Recommended for superior quality, perfect fit, and dependable performance. Backed by Wagner's years of experience in designing and manufacturing brakes for original equipment.

2 REFILL WITH GENUINE Wagner LOCKHEED HYDRAULIC BRAKE FLUID No. 21

No. 21 is an all-season, dependable fluid that mixes with all other approved brake fluids. It is used by car and truck manufacturers, and is recommended for all hydraulic brakes.

3 RELINE WITH GENUINE Wagner CoMaX BRAKE LINING....

Unsurpassed for quick, safe, smooth stops, and for long-wearing qualities. The CoMaX line provides *complete coverage* for *all* brakes. In rolls, sets, blocks or slabs.

For details, consult nearest Wagner jobber.

Wagner Electric Corporation
6498 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.

Wagner Electric Corporation EST. WE 1891

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID - NoRoL
CoMaX BRAKE LINING - AIR BRAKES - TACHOGRAPHS
ELECTRIC MOTORS - TRANSFORMERS - INDUSTRIAL BRAKES

A47-1

Stock Control

(*Continued from page* 112)

paid out of your own pocket. There is something definite about a lock and key which helps the average mechanic to remember his Job Repair Order when he locks the door.

And mentioning Job Repair Orders brings us to Stock Records which we have attempted to keep free from actual Stock Control. Mention of the Want Book and of the order blank did creep ahead of this paragraph a bit and that leaves us with only two important pieces of paper work left. The Job Repair Order is not technically a part of parts inventory, but in a small shop, the tie in is so close that it can serve a double purpose: its primary one of billing the customer the correct amount; and its secondary one. When your bookkeeper makes out the customer's bill have him spike the J.R.O. At a later time (perhaps the middle of each month wouldn't interfere with his mailing bills) he then takes it off the spike.

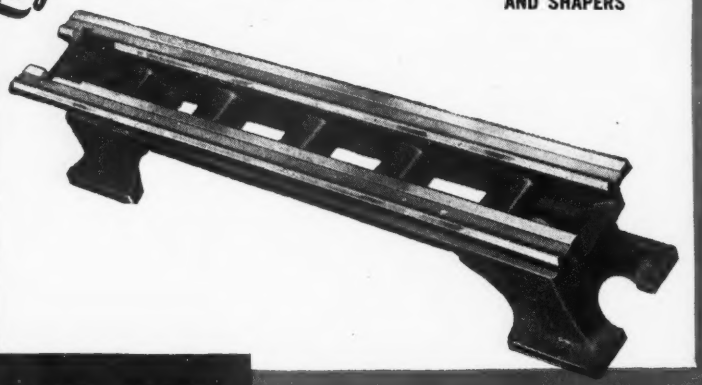
With this pile of J.R.O.s before him he can tick off on the Stock Control Cards whatever material has been used from inventory. The more nearly he can keep the Control Cards up to date the better, but an actual day to day running inventory on all items is not to be expected in the average small repair shop.

The major importance of this type of stock control system to the small repairman is not that a "look at the cards tells him what's on the shelves." The average repairman is much more apt to look on the shelves. The importance of the cards is that from them he can most easily study his volume of parts business—he can tell immediately what parts move most readily, what parts he sells the most of, which items were most popular during a certain month. He can plan ahead, and he can find out what on his shelves is dead wood. Overstocking is money tied up and helps no man's business. Guessing and memory should be replaced by facts.

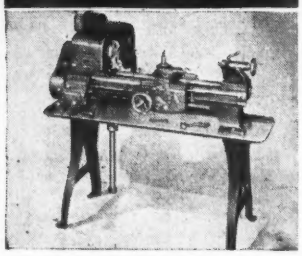
The other important piece of paper work is the yearly inventory. Once a year, if the repairman does not take a monthly inventory, a complete stock inventory should be made—an actual count of the parts

(*Continued on page* 116)

Logan A NAME TO REMEMBER WHEN YOU THINK OF BETTER LATHES AND SHAPERS



BED WAYS WITHIN .0005" OF PARALLELISM



Logan Quick Change Gear Lathe

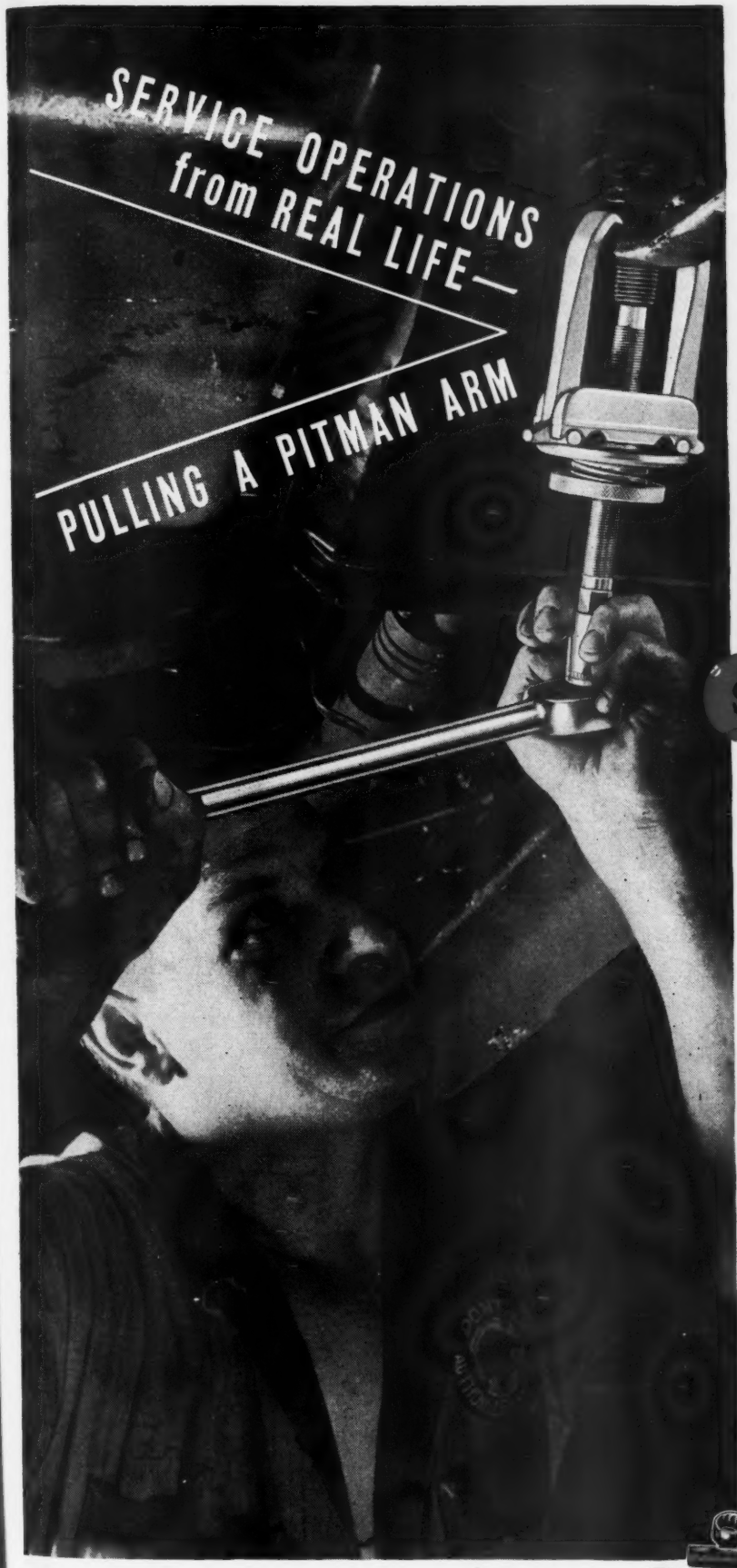
SPECIFICATIONS COMMON TO ALL LOGAN LATHES . . . swing over bed, 10½" . . . bed length, 43⅛" . . . size of hole through spindle, 25/32" . . . spindle nose diameter and threads per inch, 1½"—8 . . . 12 spindle speeds, 30 to 1450 rpm . . . motor, ½ hp, 1750 rpm . . . ball bearing spindle mounting . . . drum type reversing motor switch and cord . . . precision-ground ways, 2 V-ways, and 2 flat ways.

Another reason for the accuracy of Logan Lathes

On specially designed machines the V-ways and flat ways of Logan Lathe beds are machined and then precision ground to within .0005" of parallelism. At every point along the ways carriage and tailstock are in precise alignment with the headstock, and movement in either direction is in a true parallel to the axis of the ball bearing mounted Logan spindle. Moreover, the Logan bed stays accurate. The specially alloyed casting is extra heavy, with oversize ribs and balanced sections of even thickness that neutralize internal stresses. Thorough seasoning before and between machining operations makes the bed warp-free. The Logan Lathe bed is another example of how advanced design and careful construction make Logan Lathes accurate and dependable in the tool room or on the production line. Ask your Logan dealer, or write direct for full catalog information on Logan Lathes and Logan Shapers. P-2-M

LOGAN ENGINEERING CO. CHICAGO 30, ILLINOIS

"I had it marked so you'd know, dear."

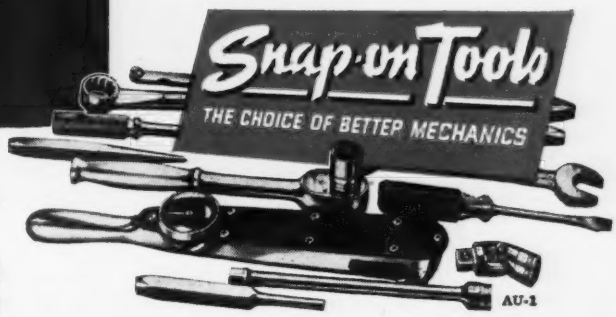


When you're glad you have a Snap-on

SNAP-ON Gear Pullers have proved their right to be a part of your tool set-up. They're versatile and adaptable . . . not only in pulling gears of a wide variety of sizes, but for pulling Pitman Arms, tie-rod ends, universal joint splines, etc. In addition, a circular plate attachment also adapts these pullers to handle water pump and generator pulleys, and special gears.

Experienced users will tell you that Snap-on Gear Pullers have plenty of "locking power" for safety . . . exceptional "pulling power" over the entire pulling range . . . and a "tip-less" pull that prevents binding.

Three popular sizes, with two smaller models are available in either standard or slide hammer styles . . . or as a combination of both. Ask the Snap-on man who calls regularly . . . or write for new catalog of 4,000 Snap-on tools.



The tools shown on the above job are Snap-on's CG-250 standard Gear Puller with a Snap-on Ratchet and Socket.

SNAP-ON TOOLS CORPORATION
8036-A 28th AVENUE KENOSHA, WISCONSIN

Stock Control

(*Continued from page* 114)

on the shelves. This count is the basis for many important studies. For example:

Inventory count 1 Jan. 1946....11
Inventory count 1 Jan. 1945.....6
Difference 5

Shows that during the year the manager has put back into his business an amount of money equal to the cost of 5 units. That actually his business has given him a larger profit than he saw in actual cash.

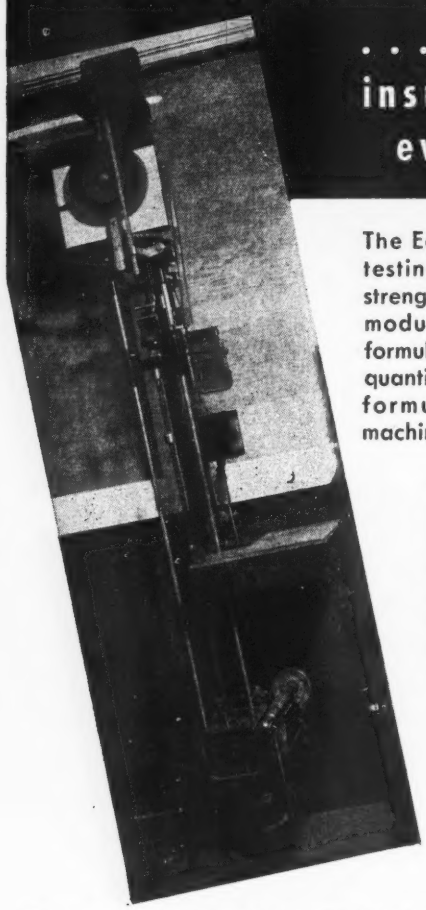
On the contrary if the inventory count for 1 Jan. 1946 is less than that for 1 Jan. 1945, it is quite probable that the manager has taken out of his business value which he thought was profit. Actually he has reduced the net worth of the business. In some lines this may be a wise move, but it's a good idea to know where that kind of money comes from. It may be from the lifeblood of your business. Another use of the inventory count is that

Inventory 1 Jan. 1945 . . .
Plus purchases for 1945 . . .
Minus sales during 1945 . . .

Should equal the actual count on your shelf for 1 Jan. 1946. If it does not, either you can't count or you're giving away parts. Plug that leak, now!

Tensibility :: Elongation :: Modulus

. . . Laboratory testing insures live rubber in every CAMEL Patch



The Egan laboratory includes this rubber testing machine which checks the tensile strength, the per cent of elongation and the modulus of all rubber compounds being formulated for CAMEL Patches. Before large quantities are made, small portions of every formula are thoroughly tested on this machine.

Rubber thus checked is known definitely to be capable of curing to a true bond with the tube, making a live-rubber repair that will give service as long as the tube itself. Laboratory control of each manufacturing process is a guarantee of absolute satisfaction.

CAMEL Patches are also handy "rubber menders" for repairing hot water bottles, ice caps, overshoes, rainwear, etc.

The war-perfected, hermetically-sealed package protects CAMEL from moisture. CAMELS are made better and packed better. It's easy to understand why they should repair better.

Look for the familiar CAMEL package anywhere!

CAMEL Patches

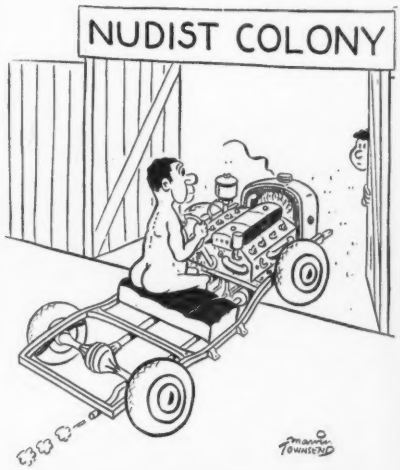
H. B. Egan Manufacturing Company, Muskogee, Oklahoma

In Canada: GEORGE M. WATSON & CO., Ltd. Toronto, 2

Other CAMEL Products available in the complete line are: Quick Cure Gum, Tube Repair Kits, Garage-size Kits, Vulcanizing Cement, Rubber Cement, Tire Patch Cement, Vulcanizing Kits, and Valve Stem Heat Units.

Truck Tire Carrier Permits One Man Change

A new truck tire carrier made by the T. E. D. Corp., of Los Angeles, is designed to make the changing of heavy truck tires and wheels a one-man job. Known as the Ted Tire Carrier, it is bolted to the chassis frame of truck, bus or trailer either at the rear or side. To change a tire the holding clamps are released and the cradle portion which holds the tire and wheel is pulled out and away from chassis to a position where the tire is clear and can be tilted upright while it is still attached to the carrier. The tire then rests on the ground and when detached from the carrier can be rolled to the wheel being replaced. The flat is rolled to the carrier and clamped to the cradle, still in upright position, after which it is tilted on the cradle swivel to a horizontal position, pushed back under the chassis in carrying position and fastened. The carrier is available in two sizes and with choice of holding down bars . . . for disc wheel or demountable rim.



"My job is starting to be fun!"

Joe, there on the left, is talking shop . . . *paint* shop. Matching colors on car refinishing, he says, used to be anything but fun! Mix and test, mix and test, and still the darn color wasn't right, the clock ticked away, and the customer was downright unhappy. Why didn't someone do something? Someone did!

Martin-Senour came out with colors that matched right on the nose—first time! These "Factory Packaged Colors" finally made color matching scientific . . . cut guesswork . . . saved time. Why? Because "Factory Packaged Colors" are mixed by color experts at the factory *to the car makers' original specs.*

You just find your color, by make and model, in Martin-Senour's handy color catalog . . . phone your nearby NAPA Jobber . . . and get the color you want—fast! And that, says Joe, makes work more fun. The Martin-Senour Co., 2520 Quarry St., Chicago 8.

NAPA Assurance of Quality

Available Everywhere—Call Your NAPA Jobber

1. Exact color match to car makers' specs!
2. Eliminates mixing time!
3. Patented pour-top can prevents waste!
4. No comebacks—no headaches!
5. Easier to handle—jobs out on time!
6. Top quality—top beauty—top durability!

MARTIN-SENOUR *Automotive Finishes*

New Products

(*Continued from page* 71)

claimed by the maker to be over 80 per cent stronger and 60 per cent tougher than the usual cast fittings. Also, the maker points out, the dense, close-grained structure of the metal in these fittings assures against porosity and blow holes and provides an added guarantee of tight connections.

Another Imperial product is a new wide range flaring tool for flaring all sizes of tubing from 1/8 in. to 3/4 in., and a new forged aluminum air nozzle with 4 interchangeable noses for all applications.

General Electric

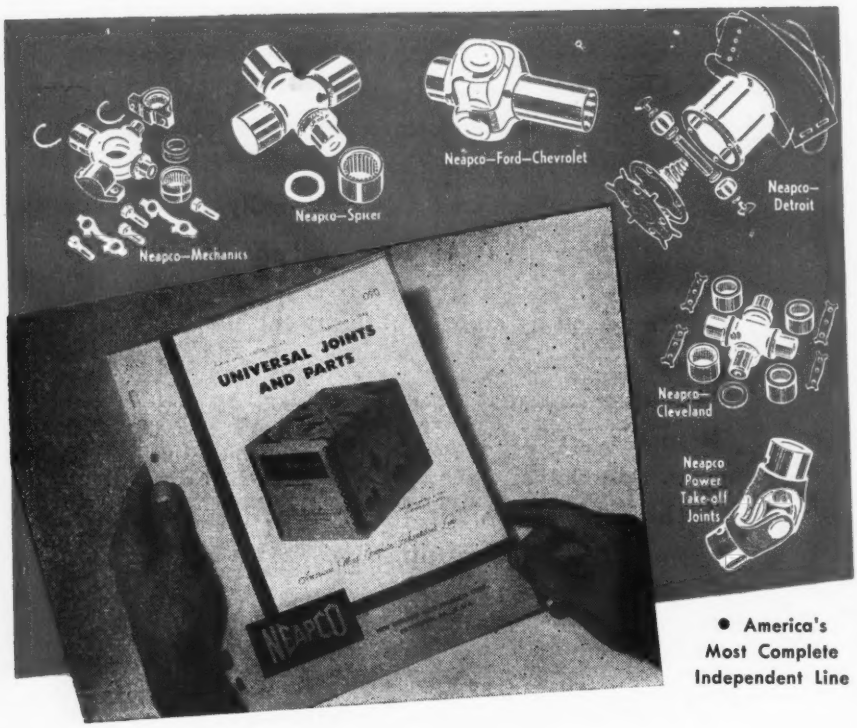
Three new products are being featured by General Electric Company of Schenectady, N. Y.

One of these is a non-synchronous electronic resistance welding control combination, designed to meet the new NEMA standards for resistance welding controls. It includes a combination of ignitron contactors and sequence-weld timers, with or without electronic heat control, all mounted in a single cabinet.

A new line of oiltight and dustproof plugging switches for flange and surface mounting has also been announced. These switches are designed to remove plugging power from a motor at the correct moment, to keep the motor from restarting in the reverse direction. The flange-mounted form is used for built-in applications, while the surface-mounted type is for general purpose use. A lockout device can be provided which releases the lockout latch and permits normal operation of the switch when the motor is connected to the line.

The light output of the third product, the improved General Electric Sealed Beam Headlamp, is reported increased by 16.5 per cent in its lower passing beam while the output of its upper driving beam has been increased by 12.5 per cent. The driving beam wattage has been stepped up from 40 to 45 watts and the wattage of the passing beam from 30 to 35 watts.

(*Continued on page* 122)



• America's Most Complete Independent Line

PACKED WITH SALES INFORMATION

To help you satisfy your inquiries quickly and correctly we've packed our new catalogue with all the last-minute specifications that it's possible to assemble. There are pictures of all the Neapco replacements for Ford-, Chevrolet-, Detroit-, Mechanics-, Cleveland-and Spicer-type Joints, clearly cross-indexed with complete Passenger Car and Truck Tables alphabetically arranged for easy reference. It's a one-book source that will satisfy nearly all your Universal Joint calls. It represents "America's Most Complete Independent Line" of Universal Joints and Parts. If you don't have a copy, write us today.

TRADE NEAPCO MARK

NEW ENGLAND AUTO PRODUCTS CORP., POTTSTOWN, PA.

"Go ahead and blow it. Petrillo won't hear you out here."

Thermoid – the Brake Lining that "Stopped" the Show!

Thousands who saw the Thermoid exhibit at the A.S.I. Show declared the Thermoid Brake Service Department the sensation of the brake lining industry.

Here, for the first time, exclusive with Thermoid, is the most complete brake service shop within a shop that the brake lining industry has ever seen.

Ask your Thermoid Jobber about the amazing "Precision Process" Brake Service Department, or write direct to us.

Thermoid

Custom-Built Brake Lining Sets *plus* "Precision Processing" equals brake perfection

THERMOID COMPANY, TRENTON 6, N. J.

THERMOID—THE LINING THAT GIVES YOU THE BRAKES

THERE'S MORE PROFIT

MORE *PROFIT* IN THE RING LINE

The King Ring Line includes Engineered Sets, Rebore-Rebuild Sets and Service Special Sets . . . the right ring for every job, for every make and model of motor.

Rebore-Rebuild Expander Piston Rings with Iron Expander Rings.

Engineered Set Piston Rings for Re-Ringing.

Service Special Piston Rings with Steel Expanders for Dealers' Service Department.

KING QUALITY

"Building for the future on a 27 year record"

SAINT LOUIS 10, MISSOURI

PISTON RINGS • PISTONS • PINS • VALVES • BEARINGS • WATER PUMP PARTS

BOLTS • BUSHINGS • SILENT-U SHACKLES • SLEEVES • WHEEL SUSPENSION PARTS

KING QUALITY PRODUCTS

New Products

(*Continued from page* 118)

Stewart-Warner Wheel Balancer

Stewart-Warner has introduced an electronic wheel balancer which makes possible balancing wheels without removing them from the car. The wheels are balanced kinetically and dynamically while they run on their own spindles in true operating position. According to the manufacturer, this system makes possible the detection of the presence of conditions that may not be corrected by conventional wheel balancing. The unit includes cabinet, wheel spinner, pick-up unit, amplifier unit, wheel block, accelerator depressor and weight tool for attaching weights. Available for 110 Volts, 60 cycle AC, it is the product of the Stewart-Warner Corporation, Chicago, Illinois.

"No space to store them . . . let's build an addition . . ." Even if you could build it, the cost would be many dollars a square foot. But look around you . . . the air between present storage and ceilings above is filling space that's "free" . . . space that's there for you to use.

REMPCO metal cabinets, parts bins, supply bins, and shelving enable you to "go up" and put to use this valuable space that's now going to waste. There's a standard REMPCO metal cabinet, bin, or shelving unit for every purpose . . . that will fit into any type of space easily and quickly. REMPCO metal storage units are floor savers . . . time savers . . . money savers.

Let REMPCO show you how!

REMPCO

The Remco METAL PRODUCTS CORP MANSFIELD, OHIO

Bowes Tube Repair Kit

The Bowes "Seal Fast" Chemical Tube Repair Dispenser Kit formerly known as the Super Kit includes all of the material and tools needed for making chemical and tube repairs. The feature of the Dispenser is the arrangement which

has been made for refilling the various compartments with several tube repair units. Each compartment has been designed to take the whole refill carton and new refill cartons have been designed for each size tube repair. A place has been provided for the Solvent and Cleaner can, with a clip to hold it firmly in place. Also, slots to hold the buffers. This dispenser can be hung on a wall or bolted to the bench. The Bowes "Seal Fast" Corporation, Indianapolis 7, Ind.

Champion Service Unit

A compact bench type unit which combines cleaner and tester, the Champion Series 500 service unit features quick action, a sparking comparator and fingertip control.

The sparking comparator is a dial registering actual comparison of old spark plugs with new, and eliminating compression charts. New cleaner valves are designed to operate at the touch of a finger and to reduce the time required to clean and dust spark plugs without removal of the flexible rubber adapter. It is stated by the maker that this unit will clean the spark plug in three seconds, a built in air blowout making possible full cleaning in one operation. The height of the unit is 18½ in. It is 17¾ in. wide, 14 in. deep and operating on 110V-60 Cycle AC circuit. The shipping weight is 65 pounds.

(*Continued on page* 124)

Instant Control of Grease Pressure
HIGH PRESSURE
LOW PRESSURE
CHASSIS
Here's one of the big time-saving features that makes ARO Lubricators so profitable for you!
It's the Chassis Lubricant Pump with ARO'S "Dual Ratio—Hi-Lo Pressure" design.
Other features of ARO design are equally advanced—assuring speedy, dependable performance to *improve your service* and *attract more lube business!* See your ARO Jobber or write The Aro Equipment Corporation, Bryan, Ohio.
ARO
LUBRICATING EQUIPMENT

New Products

(*Continued from page* 122)

Kathanode Charger

The Kathanode Charger features one-control testing procedure. According to the manufacturer all that the operator has to do in order to test the battery, is to attach the terminal clamps to the battery positive and negative posts, then rotate the Test-Time Control switch clockwise until the pointer of the Test Meter is brought up to the check line. This shows on the dial of the Test-Time Control the number of minutes required to charge the battery.

Charging is accomplished by rotating the charge rate control switch clockwise until the pointer on the charge dial registers in the light duty, standard or heavy duty zone, depending on the type of battery being serviced. This adjustment starts the charging operation. The charge terminates automatically at the end of the indicated period. Kathanode Corporation, E1201 First National Bank Building, Saint Paul 1, Minnesota.

Weidenhoff Portable Circuit Tester

The Weidenhoff Model C-725 circuit tester consists of a portable "AVR" unit combining a precision ammeter calibrated 5-0-30 and 10-3-60 amperes in one and two ampere divisions respectively, a precision voltmeter calibrated 0-10 and 0-20 volts in .1 and .2 volt divisions respectively, and a heavy-duty vitreous-enameled ¼ ohm rheostat. This unit is designed for quick testing and adjustment of passenger car voltage or current regulator and units used on trucks and buses within the voltage and current limits of the meters. Joseph Weidenhoff, Inc., 4344-58 W. Roosevelt Road, Chicago 24, Ill.

AC Ceramic Insulator Spark Plug Available

AC Spark Plugs have added to their line a new ceramic insulator spark plug. It is claimed that these plugs have a wider heat range in each thread size, accommodate a wider range of engine operating conditions, give better gas economy, idle better, and afford longer mileage and better starting.

The ceramic insulator is an AC development out of which came the ceramic aircraft plugs used for World War II fighters and bombers.

(*Continued on page* 126)

"Well, Toots, old you-know-who is getting huffy. Call me back later, huh?"

LIGHTER WEIGHT • NO RUST • NO LEAKS!

Here's the greatest improvement yet in water pump construction — a deluxe aluminum pump that weighs 2 pounds 11 ounces less than the factory duplicate. Less weight means smooth, easy operation. Light-weight aluminum impeller safeguards against vibration — prevents excessive shaft and bearing wear. Permite's new, aluminum water pump won't leak — can't form rust which works under the seal of ordinary pumps causing leaks.

NO OTHER WATER PUMP COMBINES ALL THESE OUTSTANDING FEATURES

1. 40% less weight.
2. Highly finished sealing surface.
3. Constant, uniform seal spring compression.
4. Positive, vacuum-tested leak-proof construction.
5. Ball-bearing mounted impeller shaft — requires no lubrication.
6. Made of light-weight, rust-proof aluminum.

See your Permite Distributor now — replace worn, faulty pumps with the new Permite Aluminum Water Pump for trouble-free service. Available now for Chevrolet cars and trucks.

ALUMINUM INDUSTRIES, Inc. **PERMITE** **CINCINNATI 25, OHIO**

REPLACEMENT PARTS

PISTONS
PISTON PINS
VALVES
VALVE GUIDES
VALVE STEM KEYS
VALVE SPRINGS
WATER PUMPS
WATER PUMP REPAIR KITS
CYLINDER SLEEVES AND ASSEMBLIES
SPRING SHACKLES
TIE-ROD ENDS
BOLT SETS
BUSHINGS
MUFFLERS AND CLAMPS
TAIL PIPES

New Products

(*Continued from page* 124)

Bendix Hydrovac

A complete vacuum and hydraulic testing stand called the Hydrovac Analyzer is available to Bendix B-K Distributors and dealers according to the Bendix Products Division, Bendix Aviation Corporation, at South Bend, Ind.

This Hydrovac Analyzer provides means of bench testing all models of the Bendix Hydrovac, a hydraulic-vacuum power braking unit for trucks and buses. The Analyzer consists of a cabinet, the upper part of which is an instrument panel provided with vacuum and hydraulic gauges and suitable control valves. In the lower part of the cabinet, an electrically driven vacuum pump provides vacuum for the testing operations. A hand operated hydraulic pump serves as a means of creating hydraulic pressure. The Analyzer is designed for service station use after major overhauls on the Hydrovac or for checking the performance of units that may be questionable.

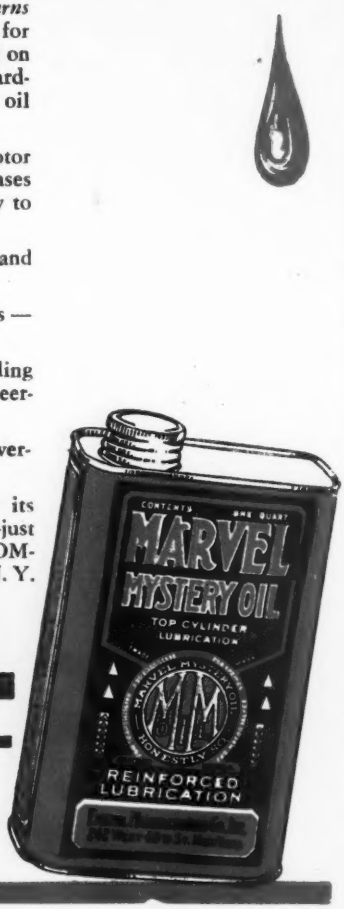
Also announced is the Bendix "Metalclene" Parts Cleaner which does its work with a physical rather than chemical action. Its wetting action is said to lift foreign coatings from metal surfaces by destroying the bond that makes solids stick to metal rather than by eating away or dissolving grease and carbon by chemical action.

Such magnificent performance for so little attention . . . the amazing, efficient automotive motor certainly *earns* a share of loving care! Yet, many a motor is taken for granted—fouled up and gummed up inside, strangled on sludge and varnish. What's worse, vital valves, hard-working parts in hot top cylinder zones run bare of oil film—stark naked against vicious wear.

Marvel Mystery Oil is the real protection every motor deserves. Add Marvel to crankcase oil, gearing greases and gasoline . . . four unique advantages go instantly to work against internal abuse:

- Marvel toughens film strength—stops channeling and clash—stands up under pressure.
- Marvel resists burning in sizzling cylinder tops—positively armors valves and guides.
- Marvel flows at 70° below zero—prevents congealing—insures quick starting, smooth shifting, easy steering—despite extreme cold.
- Marvel routs sticky sludge, deadly gum and power-robbing varnish.

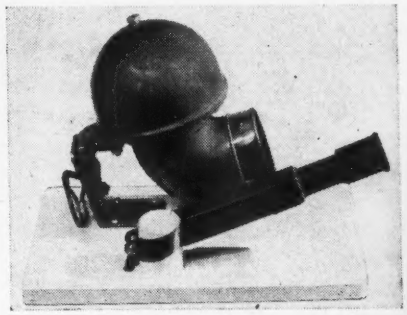
It pays you to recommend Marvel—don't neglect its proven profits . . . Marvel is a winner all Winter—just ask your Jobber. EMEROL MANUFACTURING COMPANY, INC., 242 West 69th Street, New York 23, N. Y.



MARVEL
MYSTERY OIL

El Toro Horn

E. A. Laboratories, Inc., of Myrtle Avenue and Spencer Street, Brooklyn, N. Y., are producing a new automatic horn, the El Toro, which



can be controlled by the driver so as to suit driving conditions. The horn is actuated by pressing the slide control down and releasing it slowly. Pushing this slide control up and down causes the El Toro to emit the sound desired by the driver.

"He wanted to be carried over the threshold."

USE CHRYSLER CORPORATION PARTS DIVISION

MoPar

PARTS AND ACCESSORIES

FACTORY ENGINEERED AND INSPECTED

FOR

Plymouth

DODGE

De Soto

CHRYSLER

DODGE *Job-Rated* TRUCKS

It's better than a New Year's resolution . . . more than a trademark.

It's a reminder of the earnings you'll make in 1947 by installing MoPar parts. You see, MoPar parts are factory-engineered and inspected to *fit right, last longer, perform better*. And that pays off in customer satisfaction.

So, recommend and install MoPar parts in Plymouth, Dodge, De Soto or Chrysler passenger cars and Dodge *"Job-Rated"* Trucks. You can get them from any dealer for these vehicles.

CHRYSLER CORPORATION — PARTS DIVISION — DETROIT 31, MICHIGAN

Clearing House

(Continued from page 78)

of balance and caused vibration, even when racing motor while in neutral.

On the 1940 Model 52 LaSalle, I would install a test tank next to the carburetor such as a one-gallon can with a flexible hose soldered in, then try on road and if it runs all right the trouble, of course, would be in gas tank or line as he states he has installed pump, etc. Also it could be a weak coil.

Re: Joe Heishman—

Understand that a plugged oil line going to the front or rear of the motor leading from the pump would cause excessive pressure on the gears and cause them to strip.

In August issue, a California subscriber states he has a 1937 Ford collecting moisture in flywheel housing. Believe this is caused by poor or no crankcase ventilation resulting from sludge collecting in valve chamber. Suggest washing chamber with kerosene and open hole on each side of pump rod. This could be done by removing pump support but recommend taking up intake manifold.—Arthur Zeis, Erlanger, Ky.

I CERTAINLY appreciate your cooperation in sending me your letter in which you discuss the troubles some of our readers were having with various makes of cars. I know your cooperation will be very much appreciated by the subscribers. Thanks again.

Cord Transmission Gives Plenty of Trouble

Would you please give us some help on a 1937 Cord Syncro-mesh transmission with electric gear shift. The trouble is that the gears won't shift without grinding, it slips out of gear, and it will also go into two gears at once. Outside of that it is all right. (?)

This trouble started when the owner installed two new gears on the transmission shaft. One thing we think, he has left out some spacers between the gears as there is a lot of play between gears.

If you happen to have a detailed cut of this transmission we would like to have it as well as any other

(Continued on page 130)

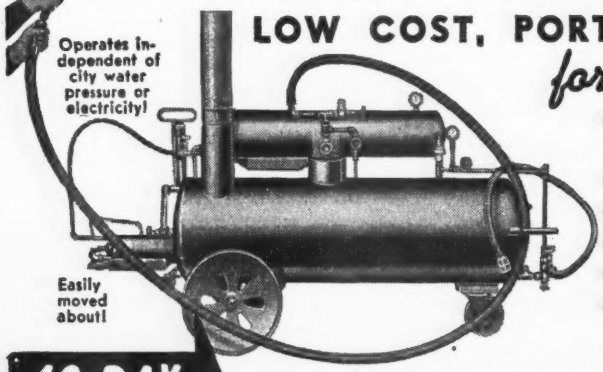
Save COSTLY MAN HOURS! Speed REPAIR WORK!
Equip FOR SERVICE! Equip TO . . .
CLEAN with STEAM
SIEBRING
STEAM CLEANER

OPERATES Economically! Burns low cost commercial fuel oil or gas! Electric units also available!

Makes QUICK WORK of Tough Cleaning Jobs! Cuts Grease and Grime in a Hurry!

A big asset in any repair shop or service station! A time and money-saver. ALSO A MONEY-MAKER! The Siebring PORTABLE Steam Cleaner provides instant steam, hot water or a combination of the two UNDER PRESSURE for fast cleaning on the toughest grease and dirt packed jobs. First it knocks loose, then it dissolves and quickly removes hardest packed dirt, grease and grime. Penetrates crevices and corners. Does a BETTER job in HALF THE TIME!

Operates independent of city water pressure or electricity!



Easily moved about!

LOW COST, PORTABLE UNIT for CLEANING
- and WASHING AUTOMOBILES
- AUTO MOTORS
- MOTOR PARTS
- TRUCKS
- TRACTORS
- and OTHER TOUGH JOBS!

10-DAY Free TRIAL OFFER!

YOU RISK NOTHING! . . . Let us put this remarkable automatic steam cleaner in your shop for 10 DAYS' FREE TRIAL. See for yourself how simple it is to operate; how economical, safe and service free! Write for descriptive literature and details of our 10 Day "Free Trial" offer.

SIEBRING MANUFACTURING COMPANY
503 MAIN ST., GEORGE, IOWA

Selling Your Greatest Unsold Market— FRAM'S "Old & New Car" Plan For '47!

YOUR GREATEST UNSOLD MARKET—that's oil filters and cartridges! Because 50% of all *new* and *old* cars are *not* filter-equipped . . . and 5 out of 6 *old* cars on the road today are running with old, gummed-up filter cartridges that need changing. So Fram introduces a red-hot plan to help you get car owners "coming and going"—the "*old and new car*" campaign! It's a natural because this year cars are either *old* or *new* . . . there's virtually nothing in between! And that means *big sales for you*, using Fram's "*new and old car*" dealer helps and cashing in on Fram's heavy advertising!

SMASH!

Here's the neatest sales trick that's hit the trade in years—cutouts of youngster and oldster's heads (illustrated below) for you to give motorists! When a new car drives up, hand the motorist one of the youngster's heads—it's labeled, "Your car is a *youngster*—baby it with a Fram!" When an old car comes in, hand the driver an oldster cutout, labeled "Your car is an *oldster*—give it a new lease on life with a Fram." From there on it's easy to make sales. What's more you get big, colorful, eye-catching posters (illustrated at left) that deliver a *personal* sales talk to every motorist who sees them—because *everybody's* car is either a youngster or an oldster today!

SPLASH!

Biggest national advertising campaign in Fram history will support the "*old* and *new car*" campaign . . . in *The Saturday Evening Post, Country Gentleman, Farm Journal, Capper's Farmer, Successful Farming*, 1,600 daily and 2,500 weekly newspapers, coast to coast.

CASH!

Fram's "*old and new car*" plan means plenty of cash for you! Here is another famous Fram merchandising plan—the best in Fram history. All you have to do is tie-in with posters and the free oldster and youngster give-aways and watch the sales come rolling in! Ask your jobber about the Fram "*old and new car*" plan on his next visit . . . stock up on Fram filters and cartridges . . . and *start cashing in on your greatest unsold market!* Fram Corporation, Providence 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto, Ontario.

FRAM OIL AND MOTOR CLEANER

Cleans the Oil that Cleans the Motor

Clearing House

(*Continued from page* 128)

information you could give us.—Jim Patrick, Jaybee Motor Machine Shop, Box 24, Clackamas, Ore.

UNFORTUNATELY there is very little information available on the Cord transmission. My recollection is that most of the trouble in shifting could very seldom be completely eliminated; however, it could be kept to a minimum by a very careful adjustment of the shifting rods and levers and also by having the clutch in perfect condition. The fact that it slips out of gear might be due to a poor adjustment of the shifting mechanism or due to worn wears or weak springs behind the pins on the shifting rails.

I wish I had a detailed drawing of this transmission as I would be only too glad to send it on to you in order to help.

I would suggest that you disconnect the shifting rods and then place the gear in mesh and then after placing the shifting lever in the corresponding position, connect the shifting rods to the lever at the transmission. Follow this through with each of the various speeds and I am quite sure your trouble would be at least reduced.

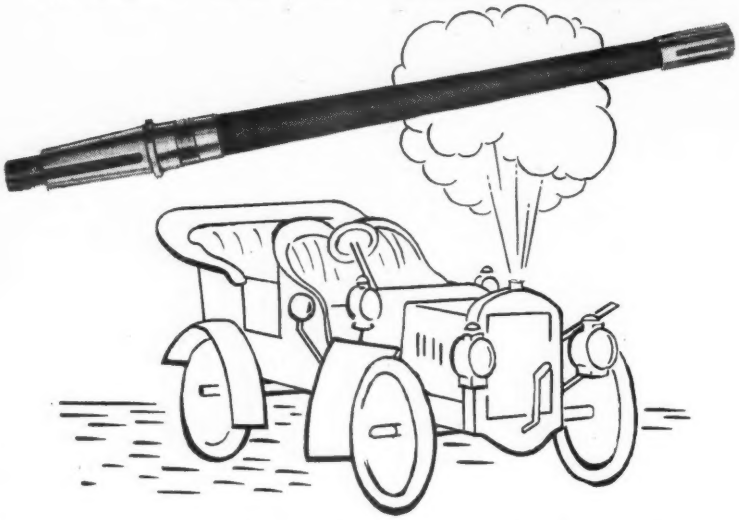
Oil Leak Around Ford Crank Pulley

I am having trouble stopping an oil leak around the crank pulley on a 1935 V-8 Ford. Have installed new packing around it, straightened the pan, also new gaskets on timing gear cover and distributor. Cleaned all breathers and the oil slinger. These seem to be working properly.

This car is equipped with a Fram filter, also had new main bearings and inserts installed a few weeks ago.—Donald Blecha, Edmore, N. Dak.

ORDINARILY the work you have performed on the 1935 Ford V-8 should overcome the oil leak you are experiencing at the front end of the crank shaft. However, I am inclined to believe that the trouble is caused by the old type fan pulley and if you will install a new one with a spiral groove in the hub your trouble will be overcome. This spiral groove prevents the oil from running out the front end and I am quite sure you will have no further difficulty after making the installation.

EVER SINCE THE GOOD OLD DAYS



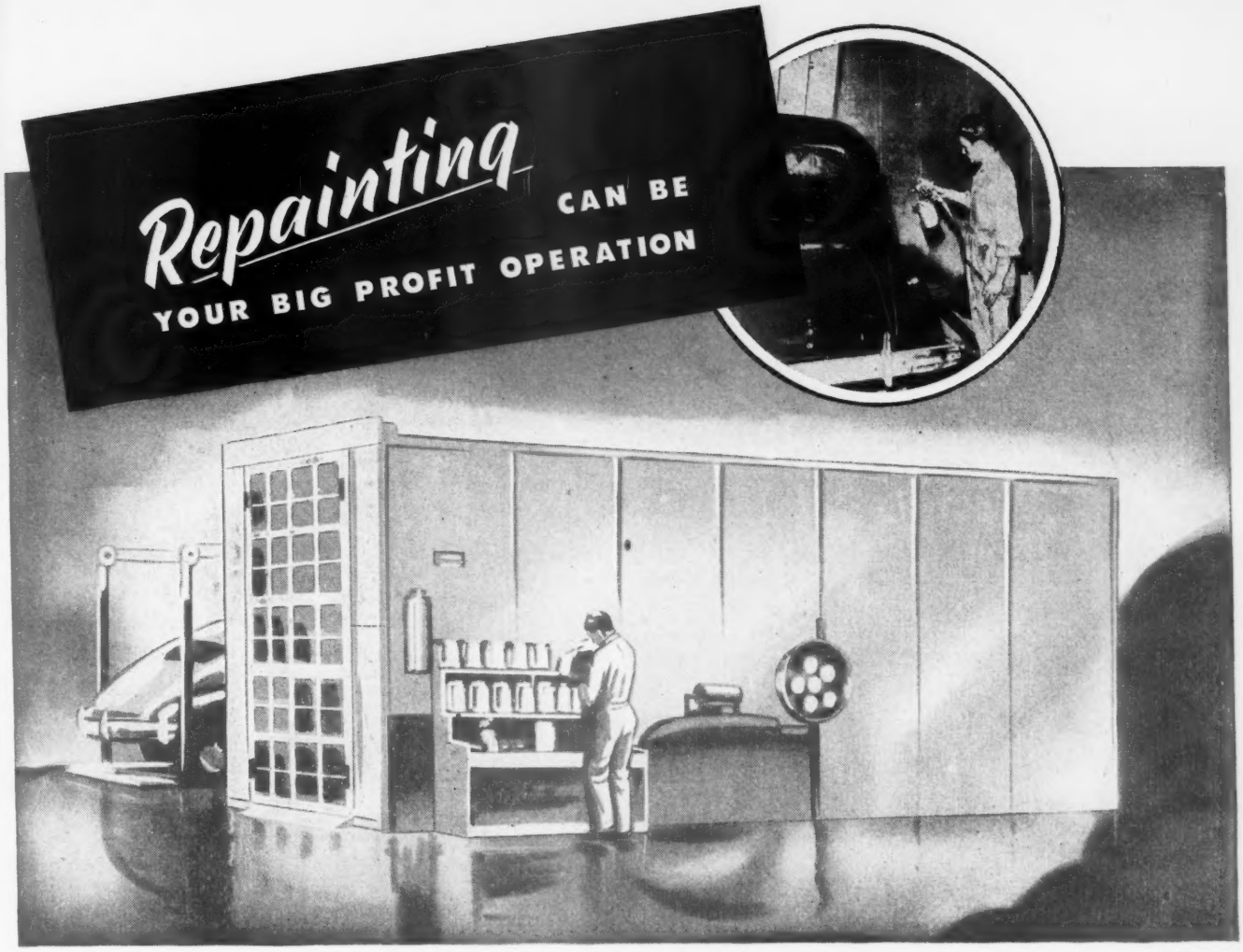
U. S. Axles have been available since 1920. Their earliest reputation was for cutting maintenance costs by permitting fewer operational failures. ★ 26 years have brought new techniques —methods for making better, tougher shafts . . . shafts designed to do the job *right* and save you time and dollars.

THE U. S. AXLE CO., INC.
POTTSTOWN, PA.

Since 1920

US AXLES

"There's no shortage of it around here."



You Can Really Promote Painting with this

DeVILBISS COMPLETE PACKAGE PAINT SHOP

20,000,000 cars need beauty treatments. The figure is growing daily. Repainting can really be your big profit operation if you go after the business with this completely modern DeVilbiss Paint Shop.

Here's all the newest spray equipment in a complete package to handle every type job from radiator core painting to complete refinishing. You can guarantee "factory-quality finishes" and do every job easier, faster and at lower cost.

Install this equipment now . . . then promote the services of your modern painting department. Point out and describe your facilities to every customer that enters your place of business. Practically every car owner is a painting prospect. Your DeVilbiss distributor will help you get started on the road to big profits.

•

THE DeVILBISS COMPANY • Toledo 1, Ohio
Canadian Plant: Windsor, Ontario

DeVILBISS

means **Quality** *in all four . . .*

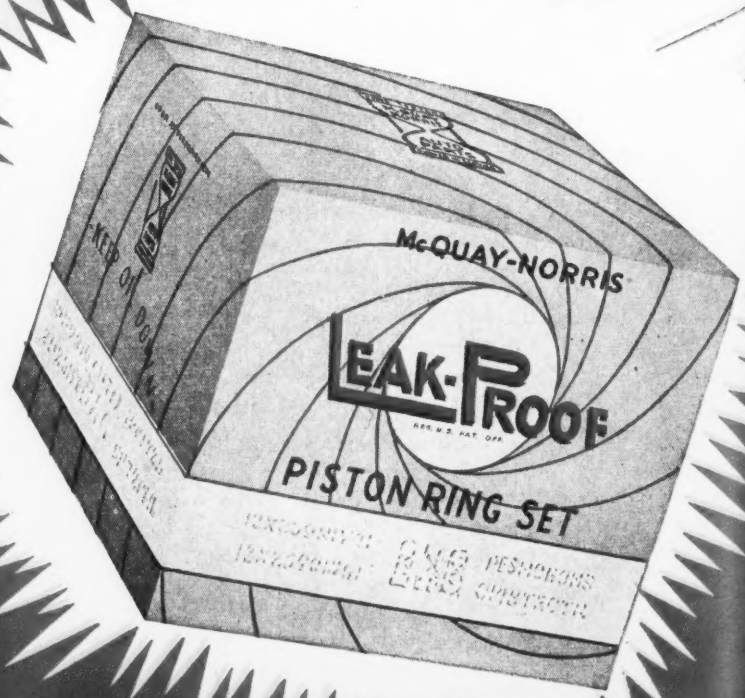
SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

SMASHING

LEAK-PROOF

REG. U. S. PAT. OFF.

PISTON RINGS



Orders for LEAK-PROOF Piston Rings have reached amazing proportions, surpassing even McQuay-Norris' greatest expectations. Never before has a set of rings proved so satisfactory. Never before has such a development by McQuay-Norris so completely captured the trade.

TIME TESTED McQUAY NORRIS AUTO PARTS PROVEN IN SERVICE

A POST WAR DEVELOPMENT OF McQUAY-NORRIS

ALL RECORDS

NEW

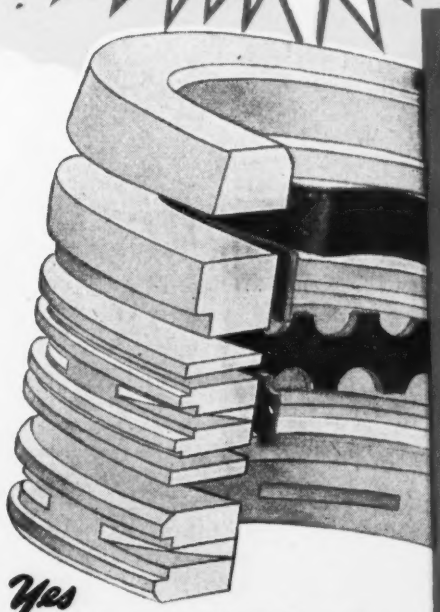
POSTWAR

GUARANTEED

HERE'S WHY . . .

LEAK-PROOF PISTON RINGS are especially designed to do a *complete* job—to help each other—to work together *perfectly!*

LEAK-PROOF PISTON RINGS are a *new* development—a new idea—a *better* way to make old motors really get up and GO!



GUARANTEED TO DO ALL FOUR

1 KEEP OIL DOWN

2 KEEP POWER UP

3 GIVE SMOOTH NEW MOTOR OPERATION

4 GIVE LONGER LIFE

Yes GUARANTEED

. . . guaranteed to give satisfactory performance for 10,000 miles or one year, whichever shall occur first, under the McQuay-Norris LEAK-PROOF Piston Ring Replacement and Labor Guarantee available upon request.

MANUFACTURING CO. ST. LOUIS 10, MO. U.S.A.

Manley Line Augmented

The Manley Manufacturing Division of the American Chain & Cable Co., York, Pa., has added to its line a 1½ ton Curb Jack, a Folding Wrecking Crane, a Universal Motor Stand, a new all-steel 1½ ton Hydraulic Jack and a Hydraulic Press with Removable Head.

The 1½ ton Hydraulic Curb Jack is made of drop forging and steel tubing and weighs 60 pounds. With removable handle it can be stowed in the back of a truck, service car or motorcycle.

The 3-ton wrecking crane weighs 320 pounds and has a 100 to 1 reduction. Equipped with automatic brakes. Loads are automatically held without pawls or ratchets.

The Universal motor stand can handle all passenger car motors not exceeding 2000 lbs. Motors can be turned anywhere within a 360 degree radius. Designed to hold motors either parallel or at right angles to the cross arm. This motor stand is mounted on casters and a locking pin is inserted in the cranking mechanism to prevent slipping.

SERCO—Permanent seal for cracked cylinder heads, cracked blocks, leaky pumps and radiators! Here's insurance against loss of anti-freeze through leaks! A fast seller in all seasons—and a real profit maker!

NOXO—Motor vitalizer for quicker starting, better pickup on winter days! Removes gum, carbon, engine varnish from rings and valves—then keeps motor clean! Alert dealers sell Noxo with every oil change!

Other favorites in the profitable Serco line: RUSGO, KI-MO, LUBRO, SHAMO, REESO, SOLVO —all backed by the famous Serco guarantee!

SERCO PRODUCTS

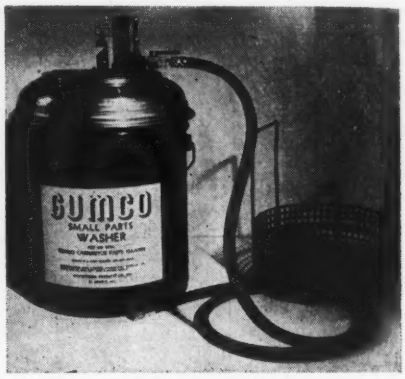
Service Supply Co.

1115 SEVENTH ST. • DENVER 4, COLO.

Gumco Washer and Cleaner

Maplewood Products Company, Inc., 3708 Greenwood Blvd., St. Louis 17, Mo., announces two new products; the Gumco small parts washer, and the Gumco liquid carburetor cleaner.

The Gumco small parts washer, actuated by an air powered motor,



has only two moving parts and does not brush or scrape. According to the manufacturer the air pressure does not flow into the liquid cleanser; thus oxidation and evaporation of solvent is prevented. The top is self sealing when not in use. Complete with fittings and eight feet of air hose, it sells for $21.00.

The Liquid Carburetor Cleaner is said to be non-toxic, non-explosive and non-evaporating. Is designed to clean the carburetor in five to 15 minutes when used with Gumco Small Parts Washer.

Ansul Extinguisher

A new chemical fire extinguisher, the Ansul-Dugas, a dry chemical type, has been introduced by the Fire Extinguisher Division of Ansul Chemical Company, Marinette, Wis.

Features claimed by the manufacturer are: simplified and faster operation, quicker on-the-spot recharge, greater heat-shielding protection for the operator, and greater capacity without increased weight. It is listed and approved by the Underwriters' Laboratories and Factory Mutual Laboratories.

Money-maker!

"Our Hartman Rapid Battery Charger and Analyzer does more than sell a lot of battery work. It's helped sell more motor tuneup, grease jobs, other service, parts and accessories than we ever sold before!"

THE HARTMAN CORPORATION OF AMERICA

If it's a HARTMAN *it's the best*

6417 MANCHESTER • ST. LOUIS 10, MO.

The HARTMAN HR53-2 *Is A Master Merchandiser With All These Features:*

Cooler 100-ampere heavy-duty, self-healing rectifier — individual cell-test meters — single-unit precision adjustment multi-circuit tap switch — cast bronze, insulated, current-saving battery clamps — heavy-duty 200-ampere cell-test and desulphation discharge unit — massive, waist-high, beautifully designed, space-saving cabinet — swivel brake caster and heavy rubber tires.

Immediate Delivery

...ASK YOUR JOBBER

Allied Machinists' Tool And Wheel Dresser

Gem-Flex, product of the Allied Machinists of Waltham, 6 Water Street, Waltham, Mass., is a wheel and tool dressing fixture for which unusual versatility is claimed by the manufacturer. It is designed to form tool bits, small threads, and thread chasers, to back off reamers and cutters. It is chrome plated, has a vise capacity of 1¼ in., has brass tipped binding screws and a centering indicator for determining vertical axis when adjusting diamond. The price, which includes vise, diamond holder, 8-32 Allen wrench, ½ in. straight-shank center, and handle to facilitate wheel dressing, is $140.00.

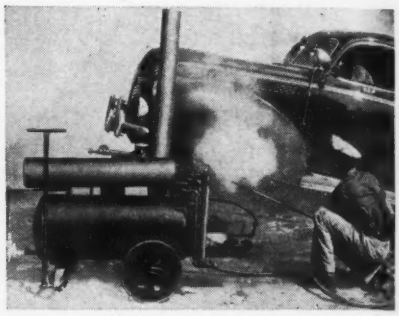
Vis-R-Vue

Vis-R-Vue is a display compartment attachable to any automobile or truck visor. Designed to protect and keep in view for reference, road maps, guide books, route lists, memos, reminders, etc., it is suitable for salesmen, police patrols, truckers, and others who need ready reference while driving.

The Vis-R-Vue is made with a plastic front reinforced with steel wire for flexibility and durability. This is secured to a grained panel and a plastic cord holds it to the visor. List price $1.95. A. J. Feltault, Visor-Ads, West Hartford 7, Connecticut.

Siebring Steam Cleaner

A portable steam cleaner for cleaning dirt, grease and grime from motors and equipment of all kinds is now being marketed by the



Siebring Mfg. Co. of George, Iowa. A low cost automatic unit, it burns oil or gas and can be moved about and operated by one man.

The Siebring Steam Cleaner is equipped with burners that generate steam in 10 minutes. It has a large capacity, heavy duty boiler and is equipped with safety devices.

"Just pretend you're carrying an atom bomb."

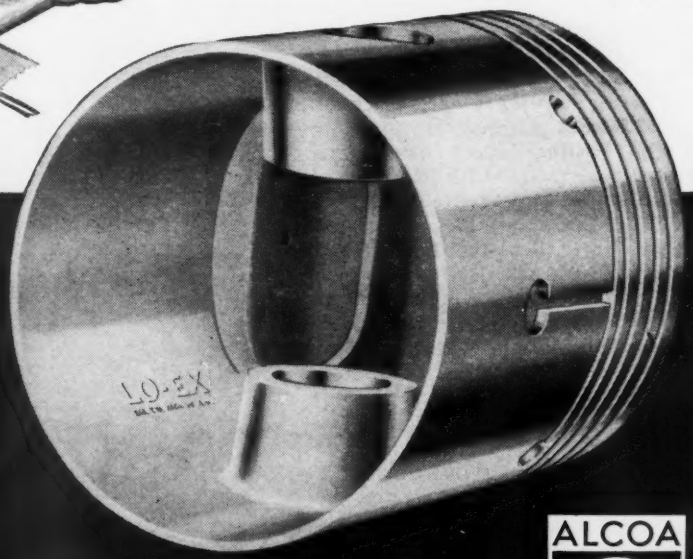
THAT'S THE PISTON!

LO·EX BY ALCOA

You can tell by looking on the *inside* of the piston. The mark of quality—LO·EX, by Alcoa, is there. Alcoa makes the finest aluminum piston castings . . . light, strong, sound.

Buy LO·EX pistons and you'll reflect the good judgment of the many car, bus and truck builders who use them as original equipment.

Aluminum Company of America
2133 Gulf Bldg., Pittsburgh 19, Pa.



LO·EX

REGISTERED TRADEMARK

PISTONS OF ALCOA

FIRST IN ALUMINUM

ALCOA
ALUMINUM

Neapco Joints

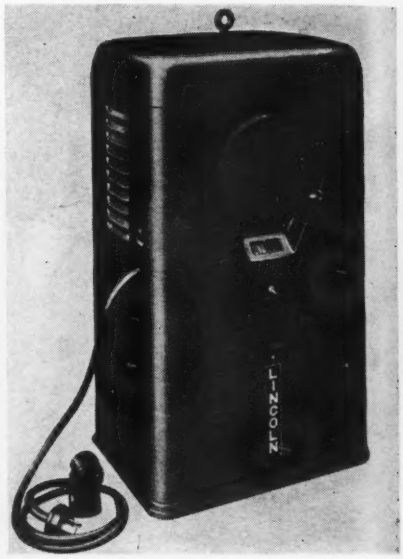
Designed primarily for light duty power take-off applications, the Neapco series 8500 and 8600 Universal Joints feature, according to the manufacturer, economy and long-service life.

The journal, or center-cross, has hardened and ground bearings; and it is provided with an angle type grease fitting which permits one short lubrication to all four bearings.

The bushings are separate pieces and incorporate counter bores for positioning of lubricant seals; and for locating diameters are narrow to prevent rotation when assembled into the lug stamping. The lug stampings are so designed that opposing lugs meet at the joint center-line to form a circular locating surface for the individual hub. The hubs are permanently joined to the lugs to complete the assembly. Due to this method of fabrication these joints cannot be disassembled.

Lincoln AC Welder

The Lincoln Electric Company, Cleveland 1, Ohio, announces the new "Fleet-Arc" AC welder. Feature of the Fleet-Arc welder is the "Arc Booster" which, according to the manufacturer, surpasses the conventional AC welder in ease of welding, depth of penetration, range of output, economy of operation, safety, dependability and service



life. The Arc Booster augments the current when the arc is struck. The arc is started automatically when the electrode touches the work.

A selective switch on the front of the welder governs the amount of booster current to be used in striking the arc, thus providing a range of striking intensity to suit requirements in the welding of thin sheets or heavy plates, making of tack welds, or in the use of various types and sizes of electrodes. This welder is manufactured in 200, 300 and 500 amperage range.

Micro-Linor Toe Gage

The Micro-Linor dynamic toe gage is claimed by the manufacturer to check all four wheels in less than 5 minutes. Designed to fit all cars, it tests front and rear wheels and trailer wheels. This toe gage checks operating alignment and shows feet of scuff per mile on tires and the side-slip of each individual wheel in feet per mile. The Micro-Linor Service Corporation, 1627 West Fort Street, Detroit 16, Michigan.

All belts *look* pretty much alike *even under the cover.*

But there's always more than meets the eye! Cooler running, longer wearing Durkee-Atwood belts are built around a body of tough, "cushion" stock. The Master Cords are pre-stretched, with each super-strength cotton strand impregnated with liquid rubber. These cords are locked into a layer of highly elastic, heat-resistant "tie-gum".

Molded with a double-service jacket into a complete unit, there is much more to the Durkee-Atwood Belt than you can see. Only their highly satisfactory performance reveals the complete "undercover story"

DURKEE-ATWOOD CO.
MINNEAPOLIS 13, MINNESOTA

DURKEE-ATWOOD
AUTOMOTIVE FRACTIONAL H.P. V-BELTS
TIRE PAINT • INNER TUBES • RADIATOR HOSE
RUBBER • PLASTIC • CHEMICAL PRODUCTS

NOT ONLY 7 SEALS...

But Different KINDS of Seals, for DIFFERENT Reasons!

No one Ramco 10-Up feature does the whole Ramco Re-powering job. It's the unique Ramco 10-Up combination of features which does that. It's the same with those 7 Ramco seals in a 3 ring piston. No one of them does the whole job; each one does its part, and more besides. Spiro-Seal's unique Alternating Action is an example...Together, the Ramco 10-Up features enable these rings to compensate for wear in worn cylinders, and to adjust automatically and anticipate wear in re-bored cylinders. That makes these ALL-PURPOSE rings, best for re-bore AND re-ring jobs. Best for building your business, too.

Ramsey Corporation, 3718 Forest Park Blvd., St. Louis, Mo. Factories: St. Louis; Fruitport, Michigan; Toronto, Canada.

Ramco 10-Up STOPS "Rocking Chair Action" LONGER

RAMCO 10 up RE-POWER Ring

BEST FOR EVERY JOB—RE-BORE OR RE-RING—PROVEN BY 10,000 MILE RING AND LABOR WARRANTY

2017

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Thompson's Sodium Cooled Valve

Thompson Products, Inc., Cleveland 3, Ohio, is producing sodium cooled exhaust valve for heavy-duty operation. It has a hollow head and stem filled with sodium to about 60 percent of capacity. Increased ability to withstand heat caused by higher compression ratios and longer life are said to be the result of the splashing of the inner surfaces of the head by the liquefied sodium, which dissipates the heat through the stem to the cooler engine parts.

Duco Metalli-Chrome

Du Pont chemists have developed a new automotive finish—"Duco" Metalli-Chrome nitrocellulose lacquer, described by the manufacturer as providing rich, lustrous colors and new color effects. These results, according to Du Pont, are obtained from the high degree of translucency of the Metalli-Chrome film. The effect is enhanced by small particles of metallic aluminum which act as tiny mirrors, diffusing and reflecting light within the film. Metalli-Chromes are applied by the customary lacquer finishing procedure. They are available for original factory finishing as well as for shop refinishing. E. I. du Pont de Nemours & Company, Inc., Wilmington 98, Del.

Hygrade Merchandiser

The Hygrade Products Company, Inc., 35-35 Thirty-Fifth Street, Long Island City, N. Y., has introduced a "Merchandiser" Fuel Pump catalog that contains information on Monoflex "New" pumps, contain all kits, the new half kits and balanced assortment of all three, diaphragms, gas filters, tools and testers. The other Hygrade catalog is the fuel pump loose parts catalog. The Parts catalog is available only for fuel pump specialists and rebuilders and those jobbers who sell loose parts.

Piston Expander

Moog is producing a new machine that expands pistons by a special heat treating process. The manufacturer claims that this method accurately restores all types of pistons to original size in 40 to 60 seconds. It is the product of Moog Industries, Inc., St. Louis, Missouri.

"It Was A Swell Show"

PRATT exhibited at the first ASIS (1930) and has displayed its mufflers at these shows consistently ever since. We were there again this year at Atlantic City.

A lot of people dropped in at Booth 531. We answered a lot of questions, showed many a distributor why PRATT Spiral Mufflers are tops—and how their dealers can go to town on PRATT Replacement Muffler Sales as fast as we can get the steel to make 'em.

Pratt Replacement Mufflers are sold only through jobbers

PRATT Spiral MUFFLERS
Pratt Industries, Inc. • Frankfort, N. Y.
In Canada: PRATT CHUCK CO., Ltd. • Toronto, Ont.

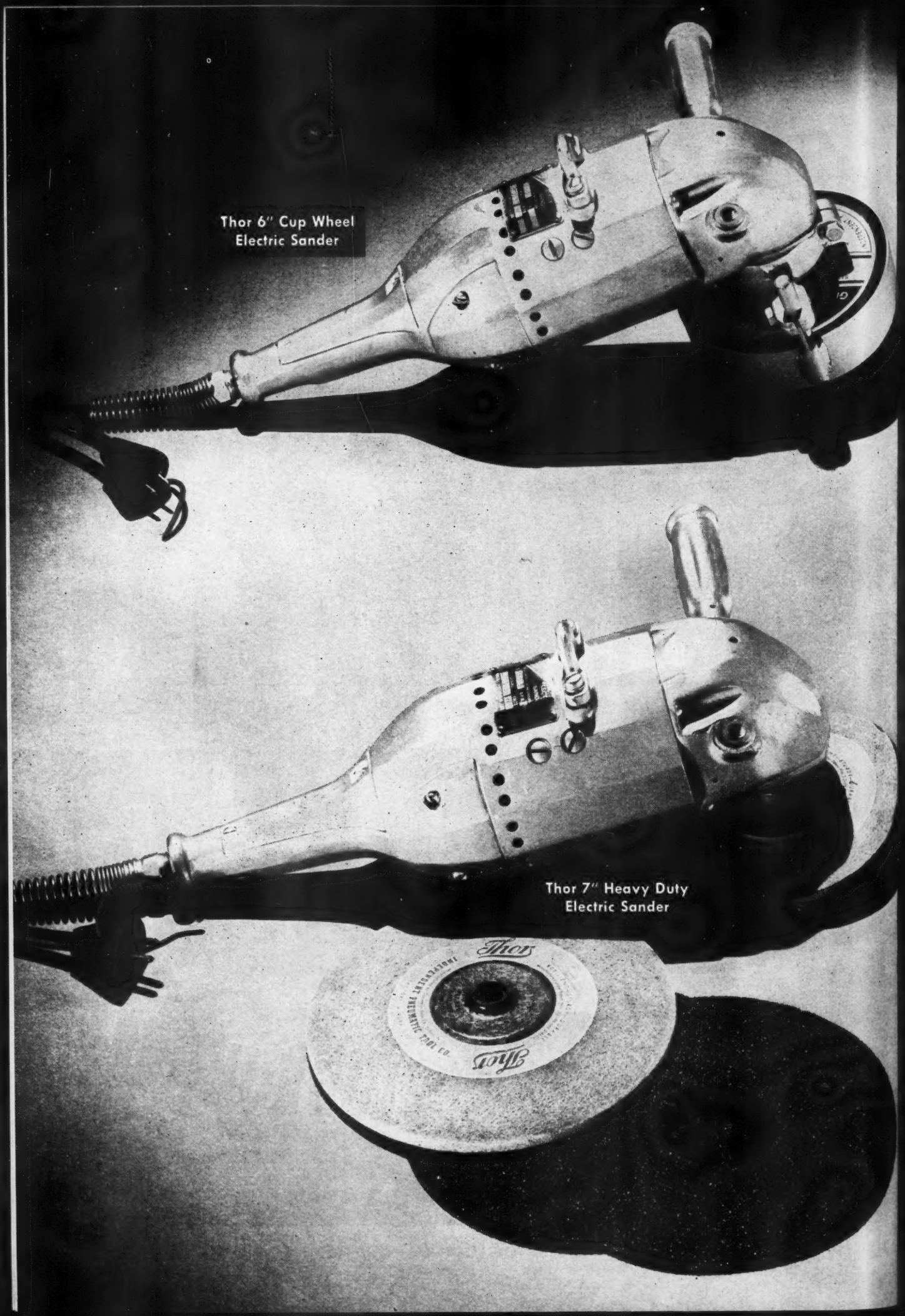
"Now the beauty of this design is that people can afford it."

SPINNING POWER

KEEP CHECKING THOSE BATTERIES! This essential service wins friends, keeps your customers' cars rolling, pays dividends in cash and good will. Replacement batteries are scarce, so — complete, regular battery service is a MUST.

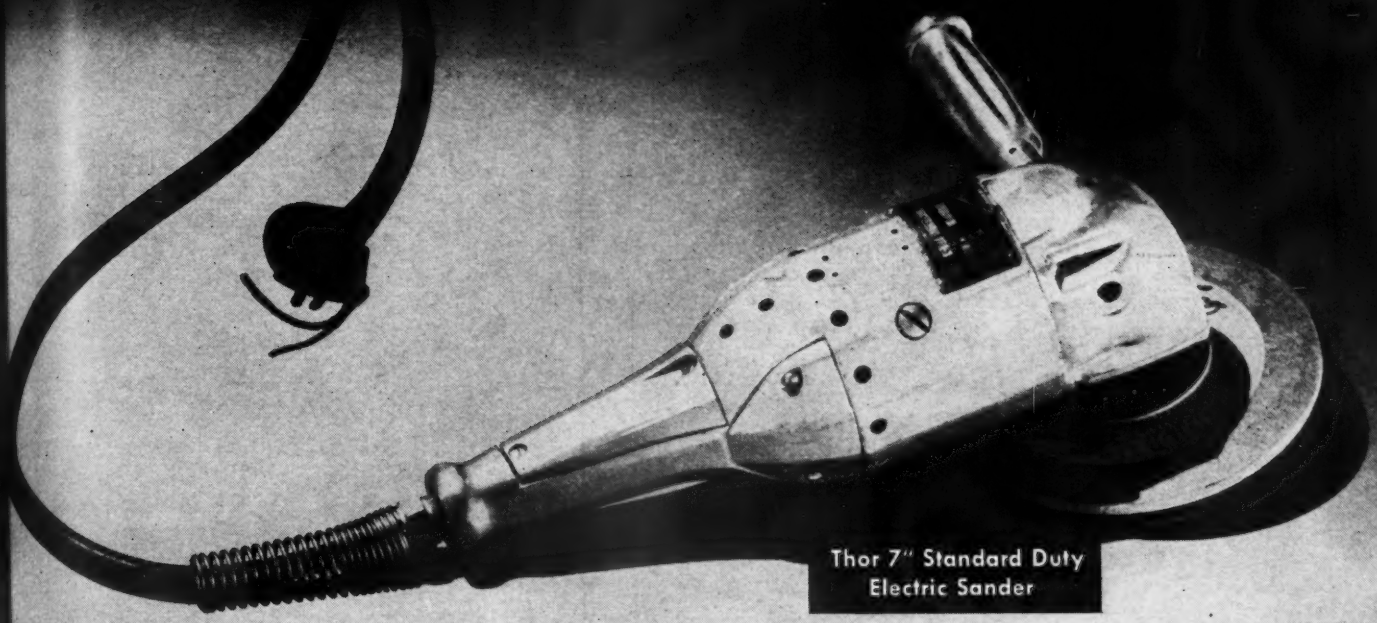
GLOBE-UNION

GLOBE-UNION INC.
MILWAUKEE 1, WISCONSIN



Thor 6" Cup Wheel
Electric Sander

Thor 7" Heavy Duty
Electric Sander



Thor 7" Standard Duty
Electric Sander

THOR PORTABLE TOOLS are designed especially for automotive repair service to speed work and cut job costs in your shop. Thor Tools save time and labor on drilling, grinding, sanding, polishing and dozens of other operations. Ask your nearby Thor Jobber to aid you in tool selection...He can give you unbiased advice because Thor makes both air and electric tools—*in a complete line of* sizes with a full line of Thor accessories.

INDEPENDENT PNEUMATIC TOOL COMPANY
600 W. Jackson Boulevard, Chicago 6, Illinois

Birmingham Boston Buffalo Cincinnati Cleveland Denver Detroit Houston
Los Angeles Milwaukee New York Philadelphia Pittsburgh St. Louis
St. Paul Salt Lake City San Francisco Toronto, Canada London, England

Thor PORTABLE POWER TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS

Weidenhoff Magneto Drive Presented

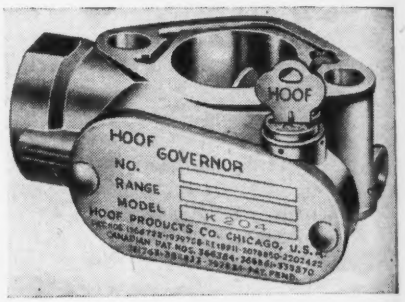
Weidenhoff's new D-370 magneto drive is a moderately-priced, quick-acting unit which is offered less motor. With driving head mounted on anti-friction bearings, both base and flange-mounted magnetos can be handled on the D-370, which is furnished with a six-point spark gap, each being provided with a static gap. The switch has two controls, one for the motor and one for reverse, to test magnetos running clockwise or counter-clockwise. The maker is Joseph Weidenhoff, Inc., 4344-58 West Roosevelt Road, Chicago 24, Ill.

Westinghouse Spotlight

Casting a concentrated glareless ray four times more powerful than a sealed beam auto headlamp, the new Westinghouse sealed-beam spotlight has a half-mile range. It was designed for use on automobiles for reading road signs and house numbers. The new all-glass spotlight has a sealed parabolic reflector of high reflection efficiency and a tungsten filament. A parasol-shape filament shield eliminates stray light and prevents glare in the area between the observer and the distant object being illuminated. Westinghouse Electric Corporation, Pittsburgh 30, Pa.

Hoof Governor

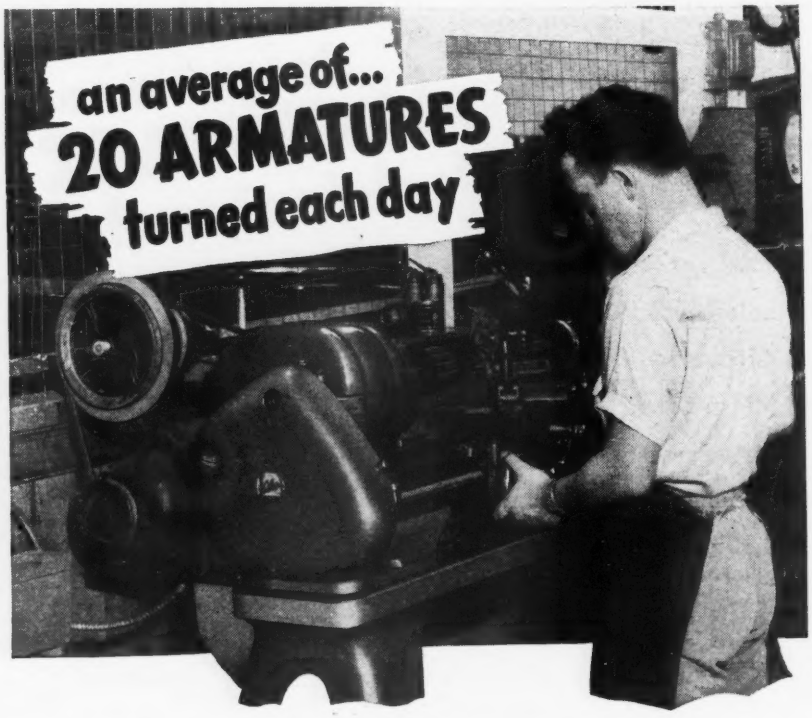
The latest Hoof Governor is smaller and more compact, to avoid interference with carburetor body, throttle rods, arms, etc. It is now made with the round hold venturi;



partial offset valve; secondary adjustment for closer regulation; full range to cover both low and high speed regulation. It is available as a completely packaged unit, in key or seal type, for all makes and models of trucks, buses, cars, Hoff Products Company, 6543 South Laramie Avenue, Chicago 38, Illinois.

B & B Heater

The Bishop & Babcock Mfg. Co., 4901 Hamilton Avenue, Cleveland 14, Ohio, is marketing the B & B Deluxe Heater, which is equipped with a 5½ in. blower turning at approximately 2000 revolutions per minute. This unit is designed to provide more air volume for defrosting. An 8 in. six-bladed propeller fan, turning 2000 revolutions per minute, is used for heating. Advantages claimed for this heater are that there are no cold spots in the discharge of the heater and that a substantial discharge at right angles is obtained from the tips of the fan blade to give additional warmth to the floor board area.



An Atlas Lathe Makes Plenty of Extra Dollars for this Kansas City Garage

Handling their own . . . plus BONUS repair jobs from other shops, Jackson Motors, Inc., Kansas City, turns an average of 125 armatures . . . rewinds 25 to 35 . . . each week; just two of many operations which bring them substantial profits from their Atlas investment.

A good mechanic can quickly acquire the skill he needs to handle your armatures, bushings, bearings, threads and repair parts.

Ask your jobber for full details on an Atlas.

Cash in Too!
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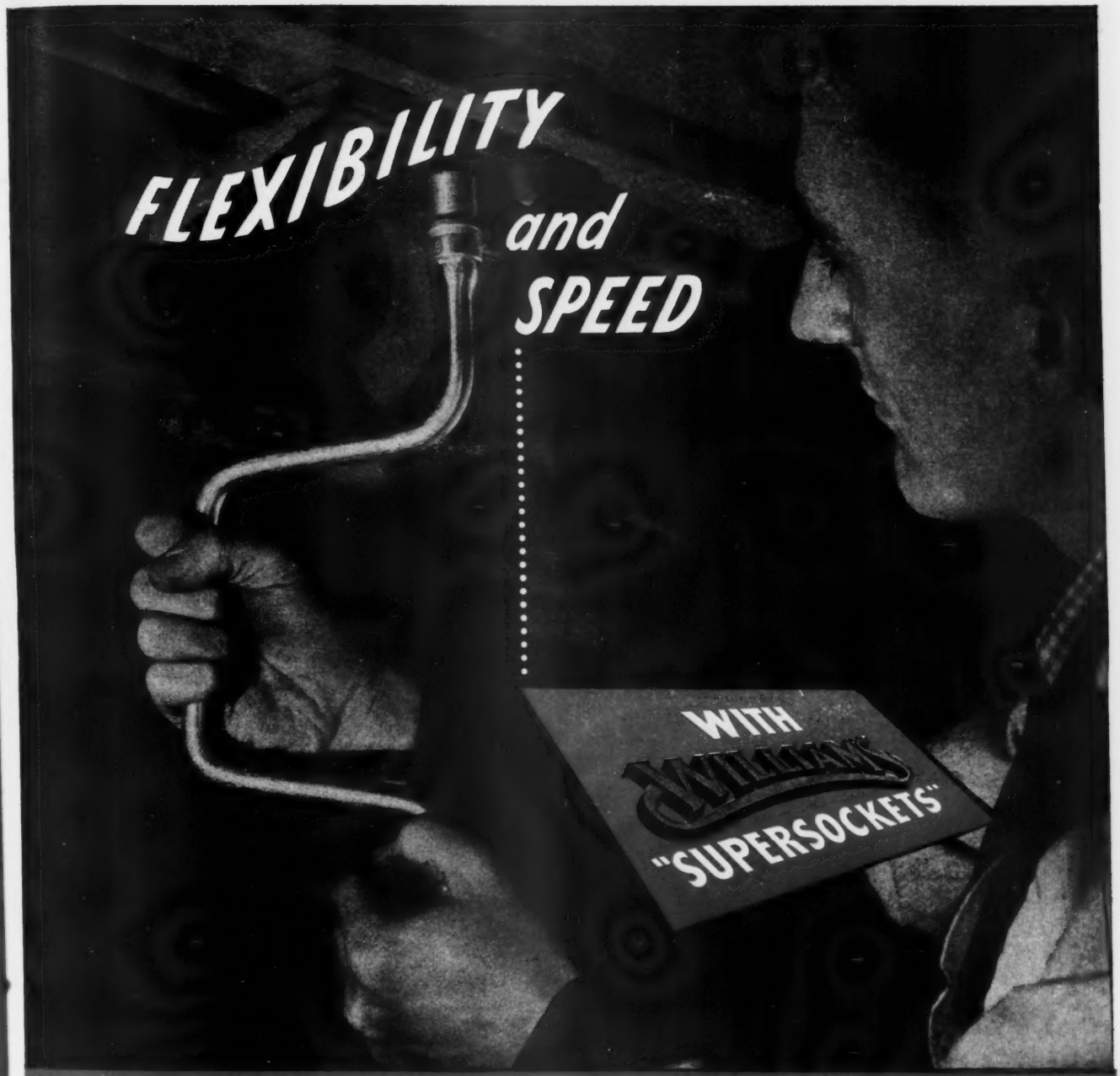
ATLAS PRESS COMPANY
188 N. PITCHER STREET KALAMAZOO 13, MICH.



Williams SUPERSOCKETS provide the mechanic with a complete wrench system. Inaccessible places can be reached with a minimum amount of time and effort.

Quick-change wrench assemblies give SUPERSOCKETS remarkable versatility. Thin walls that fit in tight places, together with a variety of extensions and handles, allow SUPERSOCKETS to get where they are needed most. Sold by leading Automotive Distributors everywhere.

J. H. WILLIAMS & CO., BUFFALO 7, NEW YORK

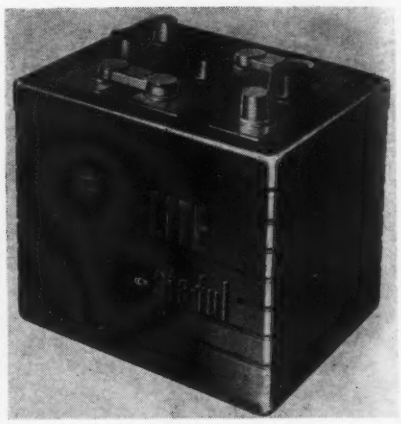
DROP-FORGINGS & DROP-FORGED TOOLS

DeLuxe Clear-Ex Removes Burnt Gases

The DeLuxe Clear-Ex (Clear Exhaust) is an automatic air valve which introduces air into the exhaust system of IC engines. Attached to the exhaust manifold, it operates by utilizing those vacuums that exist in the exhaust system. It is designed to clear the burnt gases remaining in the combustion chambers after the exhaust stroke and to replace those gases with fresh air. At full engine load, it permits fresh air to enter the manifold. The company says that a vacuum ram created by inertia draws air through the Clear-Ex after each pressure wave of the exhaust. The air thus admitted into the manifold finds its way into the cylinder through the exhaust valve by means of the same vacuum ram. Made by the DeLuxe Products Corp., La Porte, Ind., Clear-Ex sells for $7.20.

Auto-Lite's "Sta-ful"

Auto-Lite announces a new battery that, in normal car use, needs water but three times a year. Different in design and construction from the conventional battery, the Auto-Lite "Sta-ful" is stated to



have longer activity life because of its greater liquid reserve. Fibreglass insulation is used between the plates, which eliminates the need for the customary deep wells to collect the lead which sheds from the plates. This permitted Auto-Lite engineers to add two additional plates to each battery, thus increasing the cell measurements.

Auto-Lite will also continue its current line of spark plugs, which feature ziramic insulator material and konium (a special alloy) electrodes. The Electric Auto-Lite Co., Toledo 1, Ohio.

PAR AIR COMPRESSORS are built for service . . . to deliver dependable air power day after day. Their many outstanding features of construction combine to render economical, efficient performance. Compare before you buy—for By Comparison, You'll Buy Par.

The NEW 1947 Par Air Compressor catalog illustrates several new Par models and outlines in simple form a method for determining the correct type and size compressor to handle your air requirements. Write for your copy today.

. . . By Comparison — You'll Buy PAR

Lynch Manufacturing Corporation

General Offices, Toledo 1 • Factory, Defiance, Ohio, U.S.A.

"So long, Slug. I volunteered for this vanishing act."

22,000 Line items
TRUCK PARTS
at 45% to 75% off list

IT'S easy TO ORDER

THIS PERPETUAL INVENTORY LIST SHOWS:

1. Code Number
2. Mfr's Catalogue Part Number
3. Mfr's Part Description
4. Unit of Pricing
5. Quantity
6. Mfr's Catalogue List Price

Every WAA Regional Office Has This Buying Aid

It's *easy* now to order your truck parts—*and at huge discounts!* All the information you need is compiled in one compact volume which is kept up to date by means of a revised inventory every eight weeks, with supplements on critical items issued every two weeks. The inventory list of surplus truck parts includes *all makes and models as used by the armed forces.*

You can tell at a glance what we have, how much of it, and the manufacturer's list price. All this information, checked and revised monthly, is maintained by the Automotive Parts Section in *each* WAA office, but is *centrally* compiled in Detroit.

HOW TO ORDER—Go or write to your nearest WAA Regional Office. • Ask for the Automotive Parts Section. • Examine the inventory. • Check this catalogue and make up your *own list by manufacturer's part number.* • Place your order on the spot for prepaid shipment. • *That's how simple it is!* (If you are unable to visit your Regional Office, inquire by mail or telephone whether parts you are interested in are available. Be sure to designate manufacturer's name and part number.)

All orders are subject to existing priority regulations and to prior sale.

TRADE DISCOUNTS
(minimum sale—$500 net)

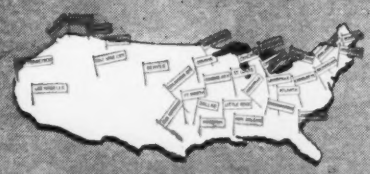
Discount off manufacturer's list price as shown in catalogue: Fleet Owner (5 or more vehicles) 45%—Service Garage 50%—Vehicle Dealer 55%—Manufacturer, Distributor and Exporter 75%

WAA POLICY ON SHORT SUPPLY ITEMS

Some parts are in limited supply. When orders for such parts are received, the parts are allocated *equitably*. You know what that means—your chance to buy is as good as the next man's, for there are no preferred "old customers." It also means you can't expect to hit the jackpot on shortage items. We'll try our best to fill your order, but the other fellow has to have *his* share, too.

30% of parts in *short* supply will be held to fill orders from Federal agencies. Orders from priority claimants will be filled in the following sequence: (1) Federal agencies; (2) Certified Veterans of World War II; (3) Subsequent priority claimants. A reserve of 10% of parts in *normal* supply will be held to fulfill the needs of priority claimants. Veterans of World War II should apply to their nearest WAA Regional Office for certification; the actual certificate must be attached to a Veteran's offer to purchase.

* * *



VISIT, WRITE OR PHONE YOUR NEAREST WAA REGIONAL OR DISTRICT OFFICE

EXPORTERS

Exporters are considered as wholesalers in the purchase of surplus property. Any questions on export *control* should be referred to Office of International Trade, Department of Commerce, Washington, D. C.

WAR ASSETS ADMINISTRATION

GOVERNMENT OWNED SURPLUS

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Fort Worth • Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville • Minneapolis • Nashville • New Orleans • New York • Omaha • Philadelphia • Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane • Tulsa

704-5

K-D Fog Lamps

K-D has added a sealed beam fog lamp to its line. Especially designed to fit in the small space between bumper and grill on modern cars, this lamp is of shallow streamlined form, 5½ in. in diameter. It has an adjustable head and can be aimed without removing the mounting bracket. A bumper-bar clamp with theft-proof washer for easy installation is provided. Finished in chromium plate it fits any car. Clear or amber lenses are available. The K-D Lamp Division, Noma Electric Corporation, 55 W. 13th St., New York 11, N. Y.

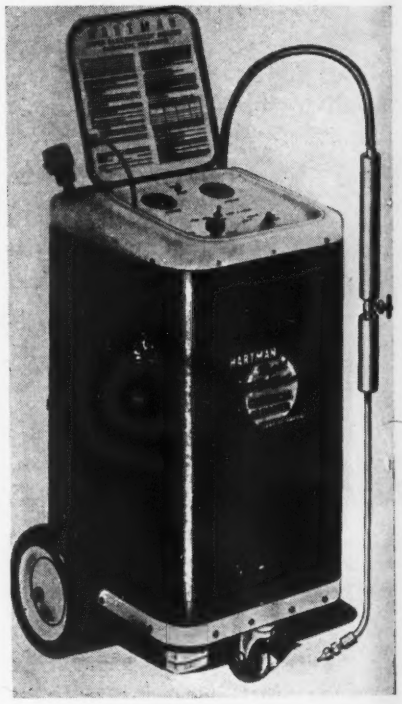
Casco Popout Lighter

Fitted with a special thermostatic unit to insure longer service in use, the Cascomatic auto lighter has a quick heat element made of nichrome wire. The lighter is set in action by a push of the knob which fits in the dashboard well. The knob is either chrome plated or made of molded plastic to harmonize with the decor of the new cars. Casco Products Corp., Bridgeport 2, Conn.

Hartman Chemical Cleaner

The Hartman Corporation of America, 6417 Manchester Avenue, St. Louis 10, Missouri, has brought out a new portable chemical cleaner, heated electrically, and employing a finely atomized spray of water. Because it does not require smokestacks, flues and ventilators, it is portable indoors and out. The manufacturer claims that since all injurious fumes, vapors and chemical-laden steam are eliminated, there is no danger of damaging nearby highly polished surfaces.

This unit has a ceramic core boiler fitted with immersion heater that heats water from tap temperature to operating temperature in approximately one minute. A Thermo-Flo Valve maintains uniform water temperature and automatic solution shutoff which prevents operation



when the chemical tank is empty.

The Hartman Electrically Heated Chemical Cleaner is built into a cabinet that matches their Rapid Battery Charges, each unit occupying less than a 2-foot square of space. It is equipped with 10 in. heavy pneumatic rubber tires, swivel casters for maximum maneuverability and brakes.

NOW... MORE LIGHT THAN EVER

with G-E Sealed Beam Lamps

THE NEWLY IMPROVED G-E Sealed Beam Lamp makes night driving safer than ever before. And here's why! Wattage for the passing beam has been stepped up to 35 watts, giving 16½% more light—and the new 45-watt driving beam gives 14½% more light—all at no increase in price! New wattages conform to S.A.E. specifications.

This amazing headlamp puts added light where it's needed, in the zone where safe seeing is most vital. Now you can offer your customers more headlighting for their money—not only when lamps are new, but throughout lamp life. Install G-E Sealed Beam Lamps . . .

THEY DO NOT GROW DIM

1. Actual road tests show that the average G-E Sealed Beam Lamp maintains 99% of its original light output up to the very end of lamp life.
2. G-E's all-glass, hermetically sealed construction makes it impossible for moisture, air or dirt to get into the lamp.

NOTE: The G-E Sealed Beam Lamp fits right or left in any make of car originally equipped with the sealed beam system or adapted for it.

"ALL-GLASS" SEALED BEAM

G-E LAMPS

GENERAL ELECTRIC

FOR SAFETY AT NIGHT—AIM HEADLIGHTS RIGHT!

Allen Fast Charger

An electronically controlled fast charger that is entirely automatic is the new product of Allen Electric & Equipment Co., of Kalamazoo, Mich.

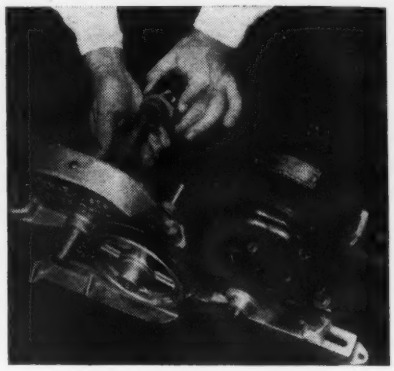
Requiring no time clock, the Allen charger charges for six minutes fast rate, then tests for one minute high rate, then charges for 30 minutes and continues at slow rate. If the battery is inoperative, the charger stops at the end of the test. Featuring an illuminated meter, individual cell test, anodized charging clips and zero pressure tires, this charger is a compact design and is of full 100 ampere capacity.

Philco Radio

Features of the automobile radios now being offered by Philco include Electro-Dynamic speakers up to 7 inches in diameter, "Inverse Feed-Back" circuit, bass compensation and automatic volume control. Also featured are the Loktal Tubes which are smaller in size yet according to the manufacturer, generates less heat, reduces battery drain and gives greater performance. Control plates to match the instrument panels of all cars are available at no extra cost.

Men-E-Uses Power Drive

The Men-E-Uses Power Drive is designed to meet any fractional hp drive requirement. It has a range of 20 to 750 rpm with 1725 rpm motors and can get down to 4 rpm with additional auxiliary shaft. It weighs 12 pounds and has a base and housing of aluminum.



The height is adjustable, depending on the length of posts used. The motor mounting is for ½ hp motors, and under, and either direction of shaft rotation can be secured by mounting motor right or left on base. The power drive in no way depends on the direction of the motor rotation. Price, $24.50 per unit, auxiliary shaft sold as optional equipment at $3.00. The Flinchbaugh Company, 750 South Court St., York, Penna.

Day-Driving Vision

Compass Instrument and Optical Co., 268 Fourth Ave., New York 10, N. Y., has announced the Polaroid Day-Driving Visor, which, it is claimed, removes annoying "hot" spots of reflected light and adds comfort and safety to sunny-day driving. Consisting of a polarized curved plastic film, mounted in a lightweight hinged metal frame, a spring grip secures the Visor to the standard sun visor. It has a wide range of adjustment in front of the driver's eyes.

"Just what the Doctor Ordered"
for WINTER-AILING MOTORS!

Cold weather is hard on automotive water pumps. For prompt and profitable service to your trade, stock Bulldog Water Pump Repair Kits *now!* Kit contains everything that goes into a pump assembly except the cast-iron body.

Available for most popular makes and models of cars and trucks since 1936. Immediate deliveries.

SEND FOR BULLDOG CATALOG AND COMPLETE PRICE LIST

Our 100-page Bulldog Indexed Catalog and Dealer Price List available on request. If you do not have a copy, write for this Catalog and Price List today. Address: Dept. MA-1.

JAMBOR Tool and Stamping Co.
3057 NORTH 30th STREET
MILWAUKEE 10, WIS., U. S. A.

NOW YOU CAN BE SURE . . .

of Positive Motor Condition . . . of Bigger Profits

with **SUN** *Scientific* SERVICE EQUIPMENT

Here are a Few of Many Reasons WHY YOU'RE RIGHT with SUN Scientific Service Equipment . .

- SUN units are in daily use at service stations of leading car manufacturers.
- SUN has overlooked nothing to make Sun Motor Testing Equipment the most efficient possible.
- SUN Equipment comes to you complete in every detail, ready to go to work—nothing more to buy.
- SUN factory-trained engineers install Sun Equipment and painstakingly instruct your personnel in all its uses.
- SUN sales and service engineers are always ready to give simple, speedy service if needed.
- SUN guarantees all equipment for one year from date of purchase against any defects in material or workmanship.

Putting Sun Equipment to work in *your* shop means no more guesswork in motor testing—and a lot more profits. Results are *positive*, because Sun Master Motor and Distributor Testers are proved scientifically *right* . . . precision quality instruments that permit thorough, accurate testing of all car and truck engines.

TO SERVE YOU Sun maintains a national organization of factory trained sales and service engineers, located in 180 zones throughout the U. S. to install, service, and thoroughly train your tune-up mechanics in the complete operation of your Sun motor testing equipment. Let SUN help YOU to greater profits—customer good will. Write for the full color Sun catalog describing Sun's profit proving plan.

SUN ELECTRIC CORPORATION

Manufacturers of **SUN SCIENTIFIC SERVICE EQUIPMENT**

6323 Avondale Avenue, Chicago 31, Illinois — **Branch Offices In All Principal Cities**

NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

You can be sure, wherever you see the NAPA Seal . . . sure of genuine quality in the nationally known lines that carry it . . . sure of prompt, complete and cooperative service from the jobber who displays it . . . He's in business for the one purpose of giving you the kind of parts service you want on cars, trucks and tractors of all makes. And to better serve you, he has availed himself of all of the facilities, and all of the experience of the largest independent organization in the parts industry. Surely, your NAPA Jobber is a good man to know.

NAPA

is the largest Independent Parts Organization in the Industry!

N·A·P·A
National Automotive Parts Association
Assurance of Quality

American Brakeblok — BRAKE LINING • CLUTCH FACINGS • FAN BELTS • RADIATOR HOSE
Allied WISCONSIN — PISTONS • SLEEVES
Spicer — UNIVERSAL JOINTS
MONMOUTH PRODUCTS — ENGINE BEARINGS • CLUTCH PARTS • BOLTS AND BUSHINGS
TRICO — VACUUM OPERATED SAFETY PRODUCTS
Allied GRAPHO — WATER PUMPS • PARTS • PACKING
BROWN LIPE — GEAR BOXES
BALKAMP — PARTS FOR FORD, CHEVROLET, PLYMOUTH AND ALL POPULAR CARS
Buffalo — MUFFLERS
MicroTest — GEARS • AXLE SHAFTS
Allied A.P.C. — VALVES
STANDARD — GREASE RETAINERS
DETROIT — UNIVERSAL JOINTS
ECHLIN — IGNITION PARTS
Allied CELORON — TIMING GEARS
DITTMER — TRANSMISSION GEARS
Allied RAYMOND — VALVE SPRINGS
RARITAN — ROLLER BEARINGS
New Britain — HAND TOOLS
PRECISION — PISTON PINS
DUCKWORTH — TIMING CHAINS
PURITAN
MARTIN-SENOUR — SHOTTING FINISHES
Belden — WIRE & CABLE
DOUBLE DIAMOND — WHEEL GEARS
FEDERAL — BALL BEARINGS
UNITED — PARTS FOR HYDRAULIC BRAKE FUEL PUMPS

Self-Cover "J" Nut

A special "J" type speed nut is now in production by Tinnerman Products, Inc., 2198 Fulton Road, Cleveland 13, Ohio. It provides a self-contained cap to cover the protruding end of the screw. The object of this design is to prevent electrical wires from chaffing on the sharp edges of the screw. It may be used in any type of sheet metal assembly where friction against the internal parts is to be avoided. The nut snaps over the screw hole in self-retaining position so it may also be used in blink location assembly. It is made of heat-treated spring steel.

Wiry Joe Package

The Crescent Company, Inc., of Pawtucket, Rhode Island, has introduced a new package design for the Crescent-Wiry Joe line of automotive wire and cable. Metal-edged, these packages have a water-repellent cellu-lustre finish and are in two pieces, eliminating the tabs which are apt to break off when the box is opened for inspection. The metal edges make it possible to stack the packages without flattening them.

Schrader Valves

A. Schrader's Son, Inc., of 470 Vanderbilt Avenue, Brooklyn 17, New York, have augmented their line of valves and inflation equipment with new tire valve caps,

cores and tractor tire gauge display packages. The tractor tire gauge which can be used to check pressure in water ballasted tractor tires incorporates a pumping action which makes it possible to clean the gauge of water and anti-freeze fluids.

SLUDGE and DRUDGE
Knocked Out!

. . . by the most complete line of Parts Cleaning Equipment in the Automotive Service Industries.

All who attended the recent A.S.I. show in Atlantic City were enthusiastic in their reception of the 1947 Kleer-Flo Line. . . . From the Kleer-Flo Parts Cleaning Brush to the automatic Kleer-Flo POWERMASTER Block Washer.

Kleer-Flo
PRODUCTS

PRACTICAL DAN, THE *Kleer-Flo* MAN SAYS:
"Ask Your Jobber Salesman for Details About the Kleer-Flo Profit Making Products You Need or Write Direct for More Information!"
RECOMMENDED BY AMERICA'S LEADING CAR MANUFACTURERS!

Practical Products Company
Manufacturers of Automotive Parts Cleaning Equipment
Minneapolis 8, Minnesota

The 1947 streamlined Kleer-Flo CLEANMASTER Parts Cleaner
Cleaning Compound: Kleer-Flo Hi-T DEGREASOL

The new and different Kleer-Flo POWERMASTER Block Washer . . . gas fired, mechanically agitated.
Cleaning Compound: Kleer-Flo Hi-T GREASOFF

The Kleer-Flo CARB-U-TATOR for efficient cleaning of carburetors, pistons, etc.
Cleaning Compound: Kleer-Flo Hi-T CARBUSOL

The Kleer-Flo CLEANING BRUSH. Heavy duty . . . will not soften or flare out.
The Kleer-Flo FILTER ELEMENT for use in the Kleer-Flo Patented PUMP.

The Kleer-Flo ROTO-PUMP for safe removal of liquids from containers . . . reversible action.

The Kleer-Flo HYDROMASTER External Engine and Chassis Cleaner. Air operated with Automatically Controlled Spray Gun.
Cleaning Compound: Kleer-Flo Hi-T MASTERSOL

"Well I'll be . . . a zipper!"

CRESCENT CABLE-GRAM

NEW DESIGN FOR STRONG, ATTRACTIVE, METAL-EDGE PACKAGES FOR BATTERY CABLES, IGNITION CABLES AND IGNITION SETS CONSTITUTES LATEST STEP IN CRESCENT-WIRY JOE PROGRESS. REMEMBER INTRODUCTION OF MAROON WIRE AND CABLE (A DISTINCTIVE CRESCENT-WIRY JOE PRODUCT) THEN CAME THE COPPER LUG, PRESSURE WELDED TO ELIMINATE SOLDER OR BURNED AND FRAYED INSULATION. HEAVY BRASS TERMINAL WAS ANOTHER STEP, THE FIRST AND ONLY TERMINAL TO BE ELECTRONICALLY SOLDERED. AGAIN CRESCENT-WIRY JOE LEADERSHIP WAS DEMONSTRATED WITH THE SPOOLED CABLE DISPENSING BOX WHICH REALLY WORKS, A PACKAGING IDEA THAT SENT SALES SKYROCKETING! WATCH CRESCENT-WIRY JOE IN '47!

When next in our neighborhood stop in—see how Crescent-Wiry Joe Cable is made from bare copper to finished product in one plant, under one roof!

Trippe Spotlight

A spotlight that mounts on the roof of the car rather than through the corner post is now being produced by the Trippe Manufacturing Company of Chicago, Illinois. This streamlined lamp is said to be movable by finger-tip touch in any direction and covers a field front and back of 270 degrees. The light is actuated by an inner control knob close to the roof of the car out of the way of driver or passenger but within reach of either. A switch built into the control knob turns the light on or off.

Sealtight Connector

The Sealtight Corporation, 219½ Third Avenue, S. W., Cedar Rapids, Iowa, is producing the Sealtight Connector, a plastic cap-type unit which seals the spark plug against moisture. According to the manufacturer, when slipped over the top of a spark plug, the Sealtight Connector prevents shorting from rain, sleet, snow, and ice.

Witcote Undercoating

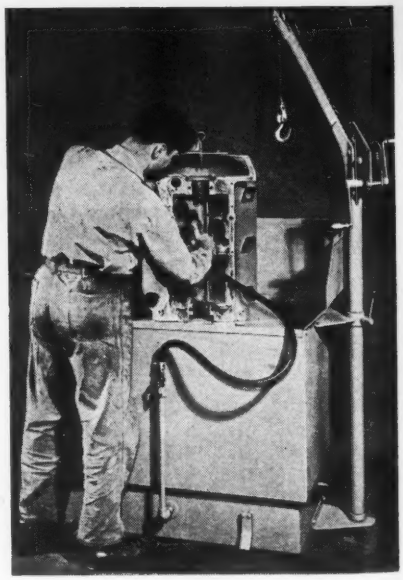
An undercoating, Witcote, has been announced by the Witco Chemical Company, 435 North Michigan Avenue, Chicago 11, Illinois. Witcote is a bituminous mastic compound which forms a coating 30 times thicker than paint and forms an abrasion resistant seal which prevents the penetration of moisture. It is unaffected by acid or alkaline sales, is a rust preventive and serves as a sound deadener and insulating material.

Witcote is applied with standard mastic spray equipment, and is being distributed through regular automotive jobbing channels.

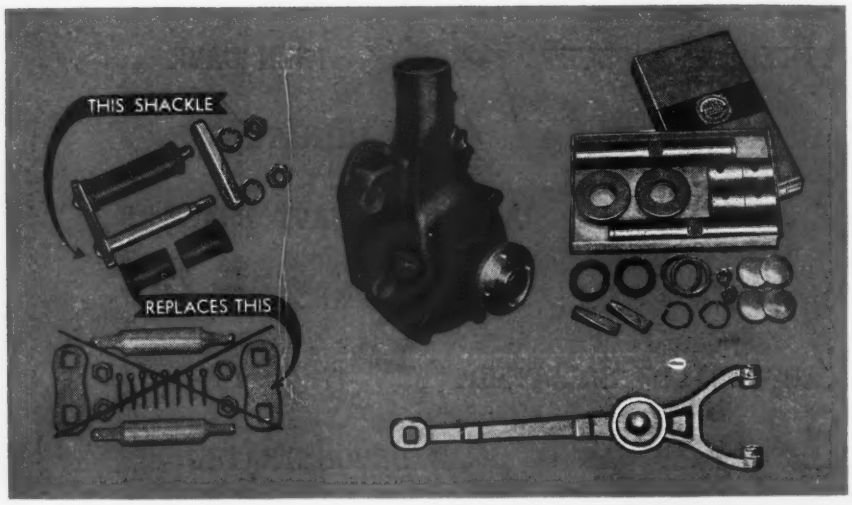
Circo Degreaser

Cleaning parts by immersion in cold solvent, the Circo Rockit automatically rocks parts to be cleaned so as to provide a continuous six way washing and rinsing action.

The Circo Flat Top is the newest of the Circo cold solvent degreasers.



To provide maximum utility in the repair shop, this unit which will handle anything up to a motor block, combines an all purpose disassembly and cleaning table with a cleaning tank, and provides a hoist with a 360 degree swing. Circo Products Company, Cleveland 15, Ohio.



AMKO Quality AUTOMOTIVE REPLACEMENTS

Original Equipment Quality!

• "CUSHION RIDE" TRADE MARK REG. RUBBER SHACKLES
• WATER PUMPS
• KING BOLT SETS
• CLUTCH FORKS

— and many other fast selling items. Write for Catalog.

SOLD THROUGH JOBBERS ONLY

Plants at Plano and Aurora, Illinois

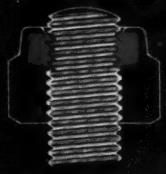
AUTOMOTIVE MAN'F'G. CO., INC.
1050 W. HUBBARD ST. CHICAGO 22, ILL.

THE FAMOUS *Red Elastic Collar* IS A SYMBOL OF SECURITY

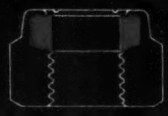
The RED ELASTIC COLLAR is . . .

PERMANENTLY CLINCHED to prevent turning under application and subsequent operational stresses.

PERMANENTLY SECURE against vibration effects. The bolt impresses (does not cut) full contact threads.



PERMANENTLY TIGHT against moisture. Bolt threads have 100% contact in collar — and a full metal seat.



REUSABLE. The Red Elastic Collar retains its grip after repeated usage.

It makes ESNA *Elastic Stop Nuts Self-Locking, Self-Sealing and Reusable*

As a result, all ESNA Elastic Stop Nuts protect assemblies against the effects of: VIBRATION: Elastic Stop Nuts lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings. . . . CORROSION: Elastic Stop Nuts keep the working threads on the bolt and nut bright and rust-free to protect their strength and permit easy removal without damage to the bolt. . . . THREAD FAILURE: Elastic Stop Nuts dampen impact stresses and materially reduce the shocks against bolt threads that frequently cause metal fatigue. . . . LIQUID SEEPAGE: Elastic Stop Nuts produce a radial-reactive pressure against the bolt threads inside the Red Elastic Collar that makes Elastic Stop Nuts self-sealing against liquid seepage. . . . COSTLY MAINTENANCE: Elastic Stop Nuts are reusable. (Torque tests on aircraft bolts prove that adequate locking torque is maintained through 15 on-and-off cycles.) They do not deform the bolt, damage the threads, gall the finish, or rust.

This wide range of protection permits full purchasing and inventory standardization and its resultant economy. For further information address: Elastic Stop Nut Corporation of America, Union, New Jersey. Sales Engineers and Distributors are conveniently located in many principal cities.

ESNA ELASTIC STOP NUTS

TRADE MARK

INTERNAL WRENCHING

ANCHOR

WING

SPLINE

CLINCH

GANG CHANNEL

CAP

PRODUCTS OF: ELASTIC STOP NUT CORPORATION OF AMERICA

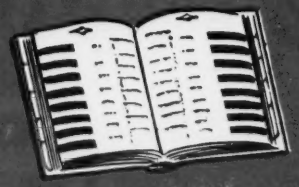
the ACME WAY MAKES PAINTING PAY
ACME
COLOR-STIR
ACME
COLOR-EYE
ACME QUALITY
PROXIT

with the New DeLuxe Model

ACME COLOR EYE

MAKES PAINTING PAY . . . THREE WAYS

SAVES MONEY—with only 20 basic tinting colors and the Acme formula book you can duplicate any standard automotive color you want. No need now for a large inventory of seldom-called-for colors.



SAVES PAINT—you mix just the amount needed for the job—no more, no less. The scale selector (lower dial) automatically measures the exact quantity from 4 ounces to 5 gallons.

SAVES TIME—New positive formula scale adjustment can be set as fast as you can move your hand. Large numbers are easy to read. A twist of the indicator knob locks the setting. Vibration or interruptions will not change the setting.

To the time-tested "interrupted light beam method" of paint mixing, the DeLuxe Model Acme COLOR EYE brings new speed, accuracy, and ease of operation.

. . . ACME

Automotive Finishes . . .

and the New

ACME "COLOR-STIR"

Now you can stir as many as six colors at once, automatically, with the new Acme "Color-Stir." Stirs either lacquers or enamels thoroughly and quickly; insures even greater accuracy in tinting formulas. Plugs into any AC 110-Volt socket. Quart and gallon cans may be used concurrently. The cans can be placed in the Color-Stir or withdrawn from it without interrupting the action. The Color-Stir is compact, swift and sure—a saver of time and materials.

Ask Your Jobber about the new DeLuxe Acme "Color Eye" and Acme "Color-Stir." Production is temporarily limited because of material shortages. But it will pay you to find out now how this Acme "Paint Laboratory" will make painting pay bigger profits.

ACME WHITE LEAD AND COLOR WORKS DETROIT 11, MICHIGAN

Stub Valve Lifters

Designed especially for work on late model motors on which the manifold and fender clearance is small, the new stub valve lifter is the product of Sunnen Products Co., 7900 Manchester Ave., St. Louis 17, Mo. This lifter, 8¾ in. long, has no handle to strike the manifold or get in the operator's way. The top jaws are said to be adjustable to ony size spring. It can be operated with one hand on any valve in the motor either over or under the fenders.

Anti-fouling Plug

The Leonard Spark Plug Company, Newark, N. J., has developed an anti-fouling spark plug especially designed for Chevrolet's with 10 mm. plug openings. Basically the new plug is a standard 14 mm. plug fitted with a special 10 mm. base and a cylindrical extension which completely surrounds the points.

The Exide Line

A line of newly designed and restyled batteries, merchandisers, and charge-testers has been introduced by the Electric Storage Battery Company of Allegheny Avenue, 19th Street, Philadelphia 32, Pa. Both the Hycap and the Sure-Start batteries are assembled in hard rubber containers and covers, with non-spitting vent plugs, electrolyte levelling devices, and positive cover seals. Capacity markings are cast in the container. The Hycap is equipped with extra heavy plates and double insulation consisting of Vitrex spun glass and

treated wood separators. The intercell connectors are also extra heavy. The Sure-Start type has standard size plates with treated wood separators.

The Startex is offered in the conventional styling. It has standard height plates, treated wood separators, and is assembled in a composition container. It has standard Exide vent plugs, electrolyte leveling device, and positive cover seals.

The New Exide Sure - Start Charger-Tester provides a fast charger, slow charger and battery tester in one unit. It will test batteries in the car after a fast charge. It also will test for battery condition before charge and after a slow charge. The Exide Sure-Start Service Procedure is outlined on instrument panel. The fast charge is at the 100 ampere rate and six batteries can be slow charged at a time.

The Keepacharge, an Exide designed trickle charger and merchandiser maintains 9 stock batteries fully charged ready for sale.

THE BEST AIR COMPRESSORS YOU CAN BUY ARE ALWAYS YOUR BEST BUY

U.S. AIR COMPRESSORS

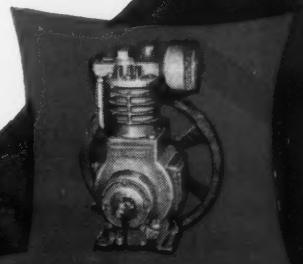
Practically all service operations are dependent upon your air compressor. A compressor that can't carry the load wastes your time, loses business, and cuts down your profits. Waiting for pressures to come up never made any money for anyone.

It's just as important to buy a compressor that can really handle the job as it is to make sure that it won't break down completely. That's why U. S. Compressors are built in a wide range of sizes and capacities. When you buy U. S., you can always select *exactly* the right unit to handle the requirements of your particular station or service department.

Thousands upon thousands of U. S. Compressors are still in use after fifteen, twenty, and even twenty-five years of hard every-day service. They're engineered and ruggedly constructed to give quicker starting, greater efficiency, and longer life—with such built-in features as Timken bearings, leakproof and noiseless check valves, combination silencers and filters, and totally enclosed dirtproof automatic unloaders to eliminate overloading of motor. Cooler operation and less carbon are definitely assured by large area cooling fans on cylinder and head.

All U. S. Compressors are built to standard specifications of the National Bureau of Standards under the United States Department of Commerce.

Send for illustrated air compressor catalog



U.S. AIR COMPRESSORS HYDRAULIC LIFTS LUBRICATING EQUIPMENT
THE UNITED STATES AIR COMPRESSOR CO. CLEVELAND, OHIO

The UNITED STATES AIR COMPRESSOR Co.
5300 HARVARD AVENUE • CLEVELAND 5, OHIO
AIR COMPRESSORS • HYDRAULIC LIFTS • LUBRICATING EQUIPMENT

A STATION is known by the

SERVICE IT RENDERS

● Pick out any successful service station and back of that success you will find the biggest contributing factor was, and still is, Service . . . backed up by thoroughly modern equipment. Hansen automotive equipment has been tried and tested by thousands of service stations from coast to coast.

The Hansen Sand Blast Cleaner is used for removing carbon from parts, paint and rust from bodies and fenders, and a wide variety of jobs. To operate, connect unit to airline, press trigger and immediately sand is blasted against work.

The Hansen Automotive Coupling is the most widely used hose coupling in the field and is used in the operation of car lifts, grease guns, spring sprays, blow guns and in many other places. Easy to operate...a slight movement of the sleeve is all that is required to connect and disconnect. Complete swivel action prevents kinking of hose.

HANSEN SAND BLAST CLEANER

HANSEN AIR HOSE COUPLING

HANSEN AUTOMOTIVE AIR LINE EQUIPMENT

The Hansen Jet Oiler is the most popular oiler on the market. It is manually operated and projects a solid jet of light or penetrating oil when plunger is depressed. All pump parts are enclosed in the handle, affording ample protection from dust, dirt and breakage. Container has a capacity of one quart.

Send for Automotive Catalog

HANSEN JET OILER

REPRESENTATIVES

New England States: A. D. GEIGER, Belmont, Mass.

Eastern, Southern States: B-R ENGRG. CO., Baltimore, Md.

Northern Ohio: F. & W. URSEM CO., Cleveland, O.

Southern Ohio, West Va., Ky.: STEINHAGEN AIRLINE PRODUCTS, Dayton, O.

Northern Ill., Eastern Iowa: NORRIS ENGRG. CO., Chicago, Ill.

Indiana, Wisconsin: NEFF ENGRG. CO., Ft. Wayne, Ind.

Central Western States: JOHN HENRY FOSTER CO., St. Louis, Mo., Minneapolis, Minn.

Western, Southwestern States: BURKLYN CO., Los Angeles, Calif.

Northern Calif., Nevada: H. E. LINNEY CO., Oakland, Calif.

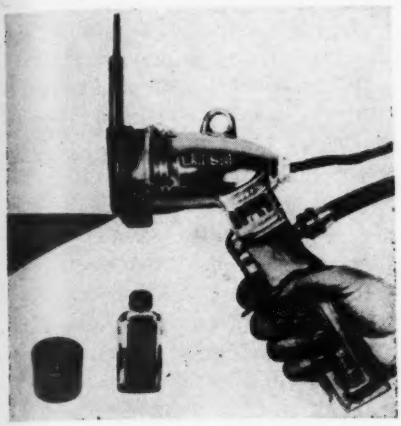
Michigan: WM. H. NASH CO., Detroit, Mich.

THE HANSEN MANUFACTURING COMPANY

1786 EAST 27th STREET • CLEVELAND 14, OHIO

Solder Spray Gun

Emess Tool & Chemical Company have increased their production facilities for the production of the new model #15 Hi-Heat Solder Spray Gun. This model has a steel

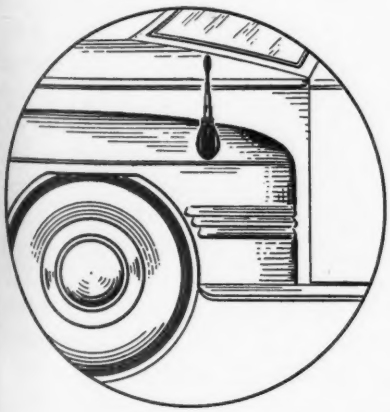


head which permits a 1000 degree F. working temperature. Air supply is used at a rate of approximately 3 cubic feet per minute. The combination of Emessco Mercury Paste and the fine particles of solder produced by the Hi-Heat steel head makes a permanent bond and feather edge, to assure improved body finishing and extreme adherence of the sprayed mass. The Emess Tool & Chemical Company, 11 Warren Street, New York 7, N. Y. Picture attached.

ICA Antenna

Specially designed for modern streamlined cars is the ICA "Concealed" automotive radio antenna.

Manufactured by Insuline Corporation of America, Long Island



City 1, N. Y., this concealed antenna exposes but 3 inches of surface; or it can be extended to 50 inches. Fittings are so designed that they fit any and all contours of fenders and are completely concealed beneath the fender. The antenna and lead fittings are permanently weather-proof. Patented brass shim contacts prevent rattle and vibration.

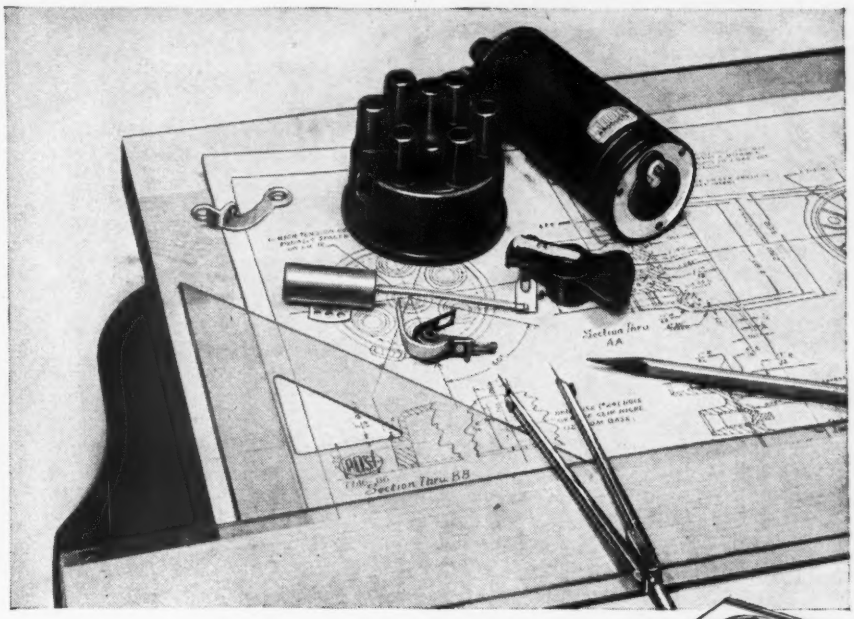
Joyce Shopmaster

The latest model Joyce "Shopmaster" two-post lifts combining short-rail superstructure on rear piston and cradle support on front piston accommodates all cars and light trucks having from 97 in. to 167 in. wheelbases. Pistons are set in fixed position.

Floor Flush Units provide an even floor at all times whether the lift is up or down. The doors, which raise and lower when lift is raised and lowered, do so automatically.

The front axle cradle is self-centering for all types of cars, and requires no adjustment to knee- action pads. The Joyce-Cridland Company, Dayton 3, Ohio.

Doin' What Comes Naturally..



from Drawing Board to Finished Product

In every phase of manufacture, quality comes naturally at Niehoff. Because of this careful attention to every detail, from designing to packaging, Niehoff Products give top-quality performance. In engineering, stamina and service they match the finest companion parts in the nation's finest motor cars, taxicabs, trucks and buses.

With the demand for Niehoff Approved Quality Products constantly increasing, we suggest that you plan ahead by placing orders well in advance to keep your stock in balance with service needs.

NIEHOFF Automotive Products

C. E. NIEHOFF & CO.
4925 Lawrence Ave., Chicago 30, Ill.

Branches: 1342 S. Flower St., Los Angeles 15, Calif. 250 W. 54th St., New York 19, N. Y.

Can your shop get his car ready on time?

The answer is "YES", if it is equipped with "Hallowell" Shop Equipment of Steel

The "Hallowell" Foreman's Desk of Steel is built for a busy shop. It is sturdy and efficient, and the foreman has a place to keep his cards, records, etc. Smooth steel finish can take the wear and tear — and welded construction prevents weak and wobbly joints.

Fig. 2197

Fig. 1855

The "Hallowell" Tool Stand of Steel can be moved anywhere on its free-rolling casters—thus the mechanic does not waste precious time walking around for tools. Welded all-steel construction makes this tool stand rugged and ready for heavy duty. They come with one or two easy sliding drawers for smaller tools or parts—or with shelves and no drawers at all.

Write for "Hallowell" Catalog of Shop Equipment of Steel and select the styles you need to give your shop that "ready-on-the-dot" plan.

"Unbrako" and "Hallowell" Products are sold entirely through distributors.

OVER 43 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 561 • BRANCHES: BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

Willys to Open Pacific Coast Plant in '47

The Willys-Overland Pacific Coast assembly plant in Los Angeles, converted to an aircraft subassembly factory during the war, will reopen in 1947 with approximately 700 employes and an annual payroll running into the millions.

The news was announced recently by three high officials of Willys-Overland Motors, in Los Angeles to direct work of re-establishing the branch factory, consisting of six buildings with 375,000 square feet of space on a 20-acre tract on Randolph Street, Maywood.

The work of equipping the plant and erecting new assembly lines will begin shortly after Jan. 1. The factory is expected to open sometime during 1947. The assembly lines will be of the newest and most modern type, and equipped with time and labor-saving devices. Present plans call for a production rate of 100 units per shift.

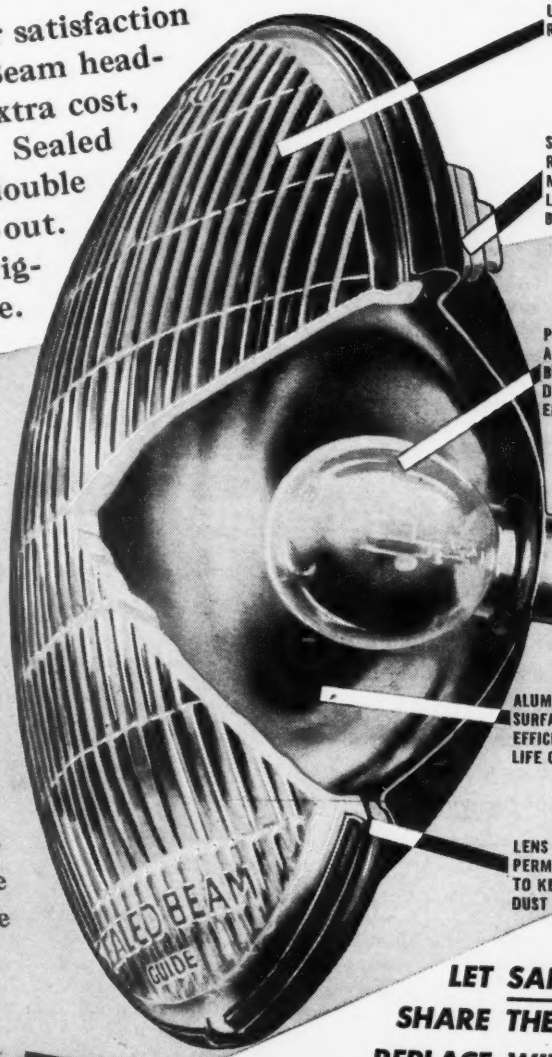
All of the Willys-Overland line of cars and trucks will be assembled in the plant for distribution in Pacific Coast states. These include the Universal Jeep, civilian version of the military Jeep, the new Jeep station wagon, two and four wheel drive trucks powered with the famous Jeep engine, and the new six-cylinder Willys passenger car which will make its debut in 1947.

U. S. Royal Air Ride

An automobile tire which utilizes a new principle of increased air capacity at lower air pressure will be produced by United States Rubber Company as its first postwar premium tire. According to the maker the new tire greatly enhances the cushioning effect an automobile receives from its tires by combining 14% more air and 8% less air pressure. Additional features include a flatter tread and sharply defined shoulders to eliminate excess rubber that normally tends to build up excess heat. Laboratory and road tests indicate that the tire runs 10 to 15 degrees cooler, thus affording greater protection against blowouts and increasing the tire's mileage.

GIVE YOUR CUSTOMERS *the double protection of* GUIDE SEALED BEAM HEADLAMP UNITS

You're *doubly* sure of giving customer satisfaction when you replace burnt-out Sealed Beam headlamp units with Guide. For, at no extra cost, Guide units bring your customers Sealed Beam lighting at its best—with the double protection of no dim-out, no black-out. There are more Guide units used as original equipment than any other make.



ACCURATELY MOLDED LENS FOR SAFE ROAD LIGHTING.

STURDY METAL REFLECTOR AND METAL LOCATING LUGS MINIMIZE BREAKAGE OF UNIT.

PERMANENT AND ACCURATELY FOCUSED BULB, SPECIALLY DESIGNED FOR LONG, EFFICIENT USE.

ALUMINIZED REFLECTING SURFACE PROVIDES HIGH EFFICIENCY THROUGHOUT LIFE OF UNIT.

LENS AND REFLECTOR PERMANENTLY SEALED TO KEEP OUT ALL DIRT, DUST AND TRAFFIC FILM.

NO DIM-OUT
—because Guide Sealed Beam units are permanently sealed against dirt, dust and traffic film. They maintain their brightness and efficiency throughout the life of the unit.

NO BLACK-OUT
—because even if a lens is cracked, Guide Sealed Beam units do not fail. Until the damaged unit can be replaced, a separate bulb inside the sealed unit continues to light the way safely.

GUIDE LAMP—
A UNITED MOTORS LINE

UNITED SERVICE MOTORS

Guide Sealed Beam replacement units and Guide lamp service parts are sold by United Motors Service distributors.

LET SAFETY SHARE THE RIDE— REPLACE WITH GUIDE

Guide
LAMP
DIVISION OF GENERAL MOTORS
ANDERSON, INDIANA

Safe Headlamps Are "Correctly Aimed" Headlamps— Check Your Customers' Headlamps Today

Eveready Mini-Max

A 45 volt B battery having an increased life but only half the weight and size of pre-war models has been developed by Eveready Batteries as power for the auxiliary equipment of commercial radio transmitters, as standby power for amateur radio transmitters, and for emergency mobile radio power supply. It is also designed for portable amplifiers and measuring equipment, and such industrial applications as will benefit by reduced weight and size of the power source. This battery utilizes the Mini-Max battery principle originally developed to power the tiny radio sets in the proximity fuses of anti-aircraft and artillery shells and employs a higher usage of space by active materials than any previous type. With outside dimensions of 5⅛ in. x 2 1/6 in. x 7¼ in., this battery displaces only 76.6 cu. in. as compared to the 179 cu. in. necessary to produce the same power and life in the conventional layer-built storage battery.

Based on similar war-time research as the Mini-Max, the new Eveready high-energy flashlight battery is said by the manufacturer to contain twice as much energy as former ones. The National Carbon Company, Inc., Union Carbide and Carbon Corporation, New York, N. Y.

Leak-Proof Rings

Developed as a result of McQuay-Norris' researches during the war, Leak-Proof Piston Rings are now designed to do work as a set and to control all types of lubricating oils, the old as well as the new. These rings, according to the manufacturer, are guaranteed to:

(1) Keep Oil Down
(2) Keep Power Up
(3) Give Smooth, New Motor Operation
(4) Give Longer Motor Life

Ergolyte Junior

Designed rather as a repair and a maintenance unit than as a heavy production welder, the Ergolyte Junior is the product of the Ergolyte Manufacturing Company, Philadelphia, Pa.

A dual purpose welding kit operates on a 110 volt circuit. This

unit covers the 30-80 amp. range in 4 heat steps. A dual purpose holder doubles as an electrode holder and ground cable for metallic arc welding or as an electric torch for brazing, soldering, or welding of nonferrous metals. The 15 in. x 8 in. x 12¾ in. carrying case with snap catches and reinforced corners weighs 38 lbs. when completely equipped.

IMMEDIATE DELIVERY!
...THE FASTEST SELLING JACK OF THEM ALL . . . The Original Friction Bumper Jack . . . THE
DREDNAUT
FRICTION BUMPER JACK
Better than Ever!
AGAIN AVAILABLE . . . the most imitated bumper jack of them all . . . the jack that's priced for the BIG VOLUME MARKET . . . the tested and approved QUALITY JACK that the public wants and buys because it supplies the need of the greatest number for a good jack at the RIGHT PRICE!
NOW IT'S BACK!! Better than ever! In 15 seconds it lifts any car or light truck 26½ inches . . . it has fast, constant climbing action . . . it holds firm at any point on the staff . . . it has no cogs to jam or greasy ratchets to soil hands . . . it has a big base for firm footing . . . AND it lowers quickly AND GENTLY. It's the mass-market, right-priced, top-quality jack that you and your customers have wanted. ORDER ENOUGH from your jobber, you'll move these Drednauts in volume, at a profit!
AUTO SPECIALTIES MFG. CO.
St. Joseph, Mich., Windsor, Ont., Canada.
Fully Covered by Patents

Collier's P.S.

suggests a

New Year's Resolution for All Automotive Dealers

PREVENTIVE SERVICE

Old cars need it

New cars deserve it

Collier's promotes it

NOW IS THE TIME TO WRITE FOR INFORMATION ABOUT THE SPRING TUNE-UP SPREAD TO APPEAR IN THE MARCH 29 ISSUE OF COLLIER'S

Resolved

That I shall immediately send my name into Collier's Promotion Dept., 250 Park Ave., New York City, so that they can keep me informed on the Big 3 P.S. programs.

That this year more than ever I shall follow the Big 3 seasonal P.S. campaigns prepared by Collier's.

Furthermore, that during 1947, I shall capitalize on Collier's Big 3 Preventive Service, taking advantage of every opportunity for profit-building tie-ups.

Collier's P.S.

Soax Cleaner

Soax, the cold immersion carburetor and small parts cleaning liquid made by E. A. Gerlach Company, 410 Buery Bldg., Philadelphia, Pa., is now being marketed in a container that includes a metal dipping basket. This basket has a solid bottom and the holes for the release of liquid are in the side. Thus carbon sludge and other foreign material removed from parts settle in the solid bottom of the basket for disposal. Nothing is allowed to pass back into the cleaner to pollute it.

Speco Rustrem

Speco, Inc., 3142 Superior Avenue, Cleveland 14, Ohio, manufacturer of automotive and household specialties, has announced a new type of paint which can be applied directly over rusty surfaces without cleaning or scraping the metal.

Known as "Rustrem," this paint is available in quart and gallon cans. It is designed to seal rusty surfaces and is guaranteed by the maker to stop all rust permanently. It is specifically for application under fenders, on auto chassis and bodies, battery holders, frames, bumpers, and so forth.

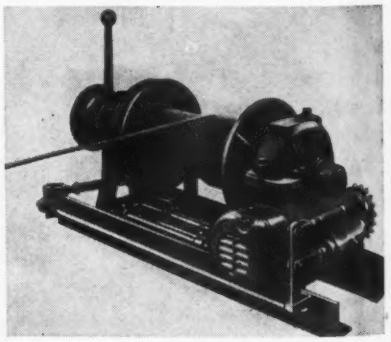
Fostoria Lighting and Heating Unit

The new portable lighting and heating tool for auto shops is being manufactured by the Fostoria Pressed Steel Corp., of Fostoria, Ohio. Mounted on three-way adjustable arms, the light can be directed under the car, inside the car, or in other hard-to-reach places. The unit is mounted on 2 in. casters and the tray base has a double receptacle to plug in power tools.

The lamp will accommodate any of the standard inside frosted lamps up to and including 150 watt size. Reflector type infra red lamps may also be installed for spot heating work, such as expanding parts, thawing or drying, baking, paint, etc.

Gar Wood Winches

Gar Wood Industries, Inc., of Detroit, is marketing a series of single level truck and tractor Rapid Reverse winches, originally developed for the armed forces. There



are currently three sizes in production: 15,000, 30,000 and 60,000 pound pull.

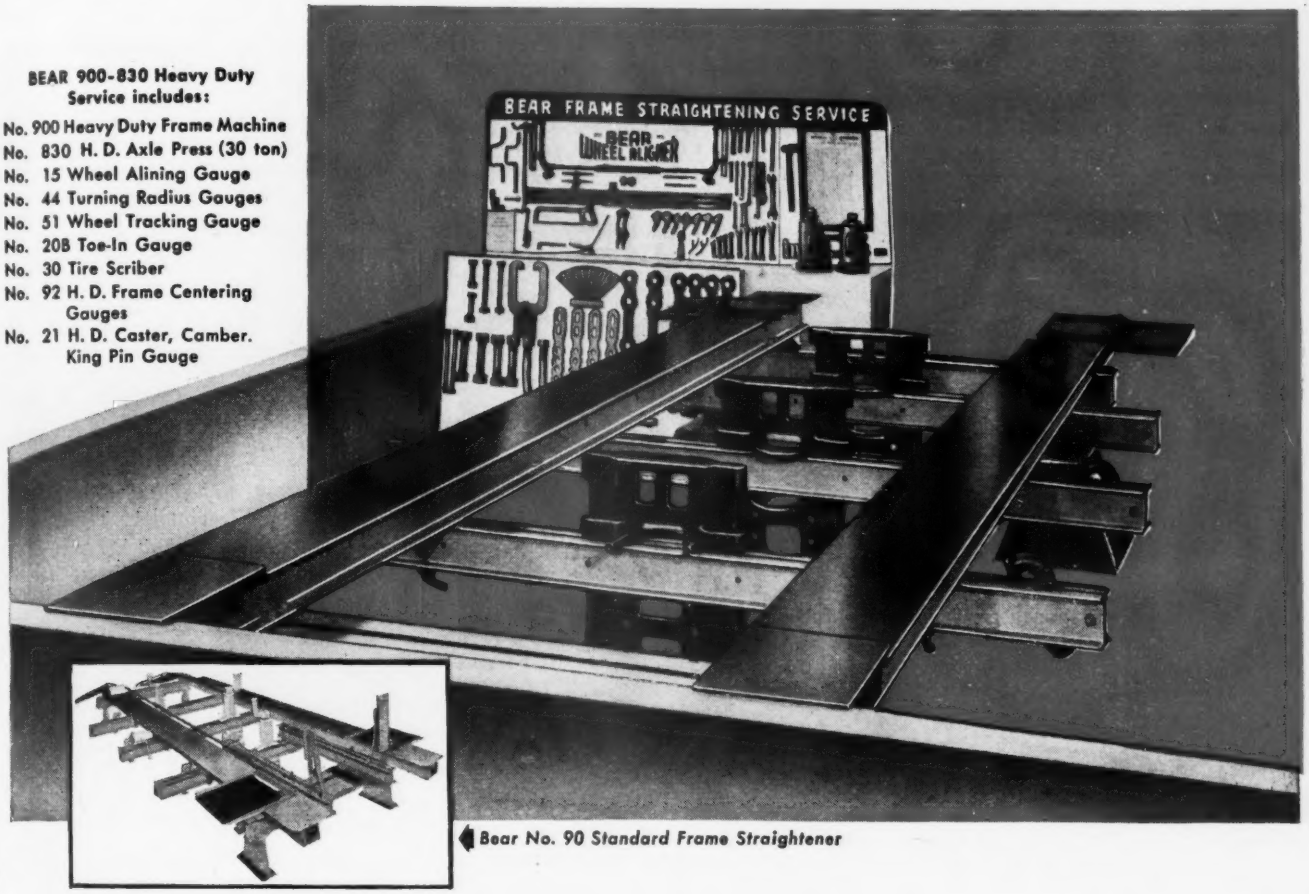
The rapid reverse winches lend themselves to remote control. The operating levers can be placed anywhere on the truck and can be operated by hand power, vacuum or air.

One More Proof That

THERE IS BIG MONEY IN
BEAR FRAME STRAIGHTENING

BEAR 900-830 Heavy Duty Service includes:

- No. 900 Heavy Duty Frame Machine
- No. 830 H. D. Axle Press (30 ton)
- No. 15 Wheel Alining Gauge
- No. 44 Turning Radius Gauges
- No. 51 Wheel Tracking Gauge
- No. 208 Toe-In Gauge
- No. 30 Tire Scriber
- No. 92 H. D. Frame Centering Gauges
- No. 21 H. D. Caster, Camber. King Pin Gauge



Bear No. 90 Standard Frame Straightener

$ Read How Dixon Built a $60,000-a-Year Business

Seven years ago Dixon installed a Bear Frame Straightener and other Bear equipment. The first year he did $7,000 business; now he totals over $60,000 annual volume in a town of 45,000. His all-Bear-equipped shop includes three Wheel Aliners and Frame Straighteners, paid for many times over, out of profits.

You can start right now, making BIG MONEY, the same way. Install the Bear 900-830 Heavy Duty Unit shown above. It will equip you to Straighten Axles, Frames and Rear Housings . . . Offer a Complete Wheel Alinement Service including Correction of Camber, Caster, Toe-in, Turning Radius, Tracking and King Pin Inclination . . . Complete Chassis Alinement service for all conventional axle vehicles. Or begin with the Bear 90 Standard Duty Frame Straightener that equips you to do all passenger car and light truck frame corrections . . . with a minimum investment.

Bear not only offers you the Finest Equipment, but trains your men in correction work in the Free Factory School, and backs up your service with National Advertising in the SATURDAY EVENING POST and TIME. The important thing is to get started. Write for catalog today or see your Bear jobber. BEAR MFG. CO., Dep't M-1, Rock Island, Ill.

In Addition to Finest Equipment . . .
POWERFUL NATIONAL ADVERTISING

When you display the Bear sign . . . Bear National Advertising in "The Post" and TIME sends the people in your town to your shop for Frame Correction and Wheel Alining Work.

BEAR STEERING SERVICE FRAME & AXLE STRAIGHTENING

SATURDAY EVENING POST and TIME

2028

BEAR *First in* ***WHEEL*** *Alining and Frame Straightening Service*

Plastic Covers for Stretching Dies

Performance of a Fiberglas-resin, low-pressure laminate as a cover for a stretching die employed by the Flxible Company, Loudonville, Ohio, makers of bus, ambulance and funeral car bodies, has led to a decision by the company to cover all of its stretching dies with a similar laminate.

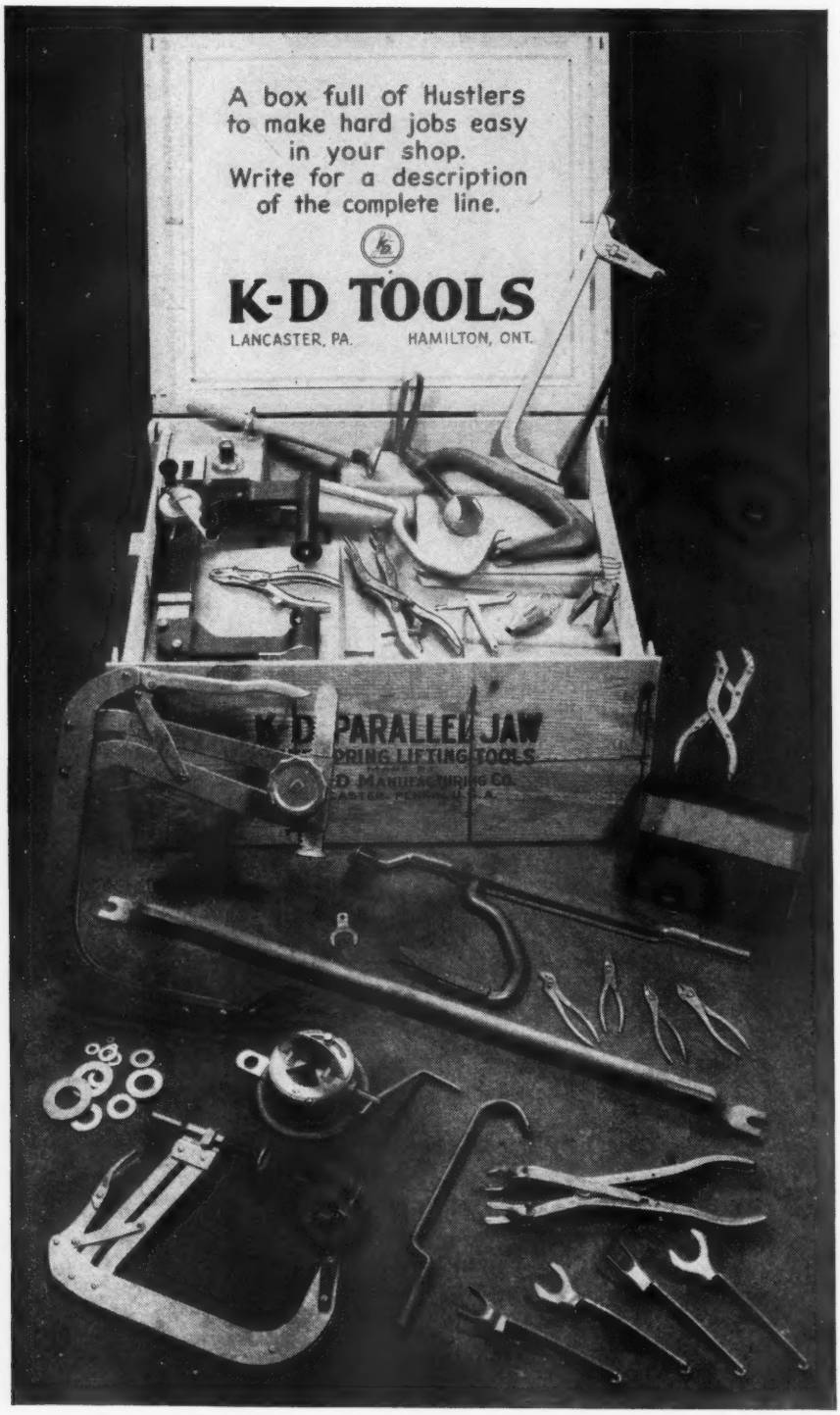
Hardwood stretching dies are used by the Flxible Company in drawing steel for body panels.

The Fiberglas-resin cover is said to provide dimension stability under all climatic conditions encountered and has been used for over 500 panels without appreciable wear. Eight plies of Fiberglas cloth were laid up in forming the laminate.

Weaver Lamp Tester

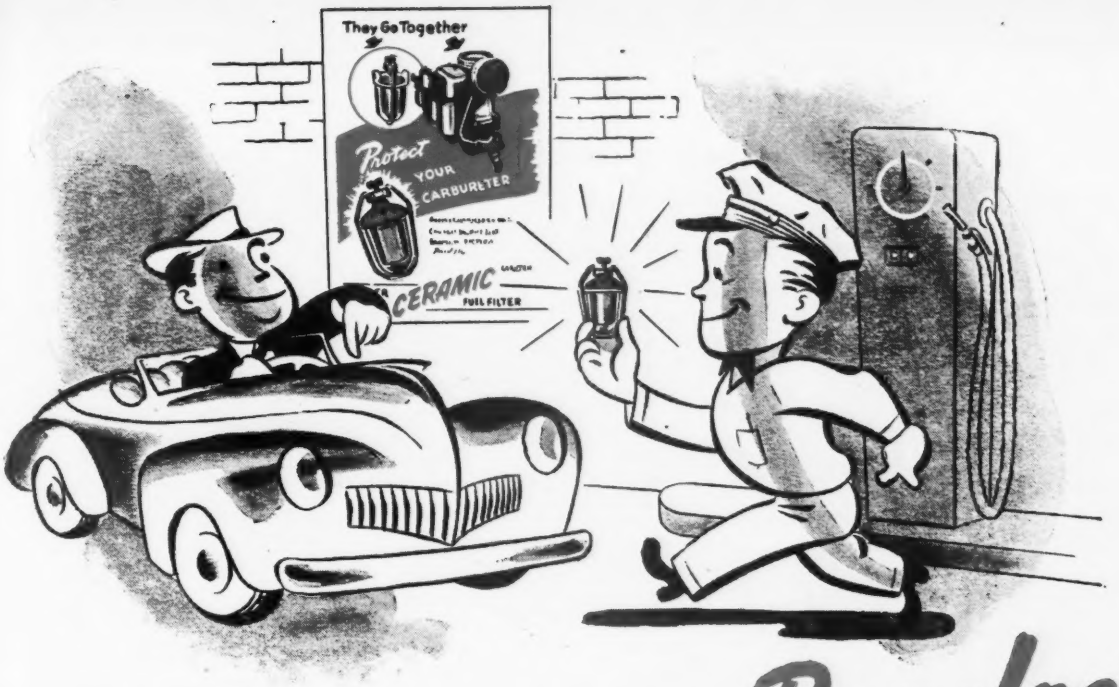
The Weaver Rayoscope, a product of the Weaver Manufacturing Company, Springfield, Illinois, measures candle power, shows side aim and drop and shows beam pattern.

The Rayoscope can be lowered to within 12 inches of the floor to accommodate the lowest mounting of fog lamps, and can be raised to 54 inches from the floor to accommodate all headlights. It is counterbalanced by means of a special torsion spring counterbalancer contained in the top of the supporting member. The entire unit is guided on two level pressed steel tracks fastened to the floor. The high-low and left-right meters, the candlepower meter, and the photo electric cells, are adjusted at the factory to function as a unit and are replaceable as one unit.



Sprayit Er Gun

A heavy duty suction feed external mix spray gun for light production work has been designed by the Electric Sprayit Company of Sheboygan, Wisconsin. Especially designed for industrial air line service where ability to apply all types of materials—paints, lacquers or enamels—the Sprayit Er Gun is of the "non-bleeder" type. It delivers an atomized spray which can be adjusted from wide fan to round dot without stopping the gun or changing the nozzle. The manufacturer states an oil and moisture filter is built into the handle to prevent contamination of spraying material. The gun is furnished with quart, aluminum clamp-on BC container, or may be used with pressure feed paint tank. The price is $16.50.



"Atta Boy Joe"

you're making friends and profits, too, every time you sell a CARTER CERAMIC FUEL FILTER

The scientifically designed filtering element made of specially prepared porcelain assures a steady flow of gasoline free from dirt, lint, and other harmful matter.
Retail Price $2.10

From "coast to coast and border to border" we're getting enthusiastic reports from wise service outlets that sell a Carter Ceramic Fuel Filter on every carbureter replacement or overhaul job.

Car owners like freedom from the annoyance of dirt, lint and foreign matter in the carbureter—and shops like the profits.

Order a sales-building counter display carton of ten from your nearest Carter distributor or jobber.

CARBURETER
TRADE MARK REG. U. S. PAT. OFF.
MARCA REGISTRADA

CARTER CARBURETOR CORPORATION
ST. LOUIS 7, MISSOURI
Division of American Car & Foundry Company

Van Norman High Speed Valve Regrinder

The Van Norman Co., Springfield 7, Mass., are the makers of the Van Norman BRW high speed valve regrinder, which features a 10-in. grinding wheel as compared with the conventional 4-in. wheel. The automatic, 1-in. capacity chuck takes all valves from 15 degrees up and is driven by a ½ hp. motor. To meet the adoption, by some car manufacturers, of split-degree valve face angles, the workhead is equipped with a vernier scale indicator which can be set to tolerances up to one minute of one degree.

Palmetto Packing

Palmetto Pyramid Packing is designed to overcome a tendency on some types of V shaped packings to weaken and split at the "hinge." It is available in molded ring form, made to exact dimensions.

The bottom ring is installed first and receives the full impact of the pressure on the power stroke. This bottom ring expands the wedge-shaped lip of each ring above it so that the packing is pressed against both the rod and side walls. Binding is prevented by infiltration of fluid between the rings and storage of fluid in the arrowhead reservoir.

On the return stroke the lessening of pressure is said to permit the built-in restitutional property of each ring to exert itself, thereby enabling the rings to spring or contract to normal. No special adapter ring is required since the top ring has a flat top surface and 45 degree angle surfaces that accommodate any standard shape gland-follower. Greene, Tweed & Co., Bronx Bldg. at 238th Street, New York 66, N. Y.

Electric Vulcanizer

Accurate timing, proper heating and correct pressure are claimed for the Speaker Electromatic. This new electric vulcanizer, for repairing

synthetic and natural rubber, applies small and large Electro-Patches, round or oval, and installs rubber-base replacement valves. The Electromatic features automatic timing variable up to 15 minutes. A low-voltage transformer is used, and a signal light stays on until the automatic shut-off breaks the circuit. Other Electromatic features include automatic wing compensators for varying tube thicknesses, a swing-down tube last and a rubber pressure cushion to prevent heat transfer and gives upward counter thrust. J. W. Speaker Corporation, Milwaukee 12, Wis.

GET SET NOW

For New Tire Sales

Patented

WITH A

Char-Lynn

AIR-POWERED

TIRE SPREADER

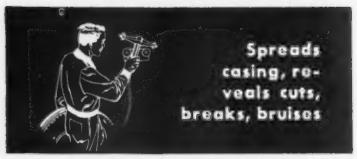
With tire production greater *now* than in pre-war days, it won't be long until it will again be necessary to *sell* new tires.

Get set for this selling job now with a Char-Lynn Tire Spreader . . . ideal for quickly and conveniently showing your customer the condition of his old casing and his need for a new tire. This lightweight, fast-action Char-Lynn Spreader is a real tire salesman . . . FOR BIGGER PROFITS put it on your sales force *today*.

SIMPLE TO OPERATE! Hang tire on roller-fitted wall bracket. Insert spreader. Give handle quarter-turn. Arms shoot open, spreads tire full 11". Hooded light floods interior. Spreader connects to regular air hose.

SEE YOUR local jobber today or write direct to us for descriptive folder.

Hooded light floods tire interior



Spreads casing, reveals cuts, breaks, bruises

Tire rotates freely on wall bracket rollers

Spreader can be hung on wall bracket when not in use

PRICE $24.85

Complete with wall bracket, rollers and light socket.

THE CHAR-LYNN CO.

2851 26th AVE. S., MINNEAPOLIS 6, MINN.

Sold - and how!

- - - Many service stations have ordered a second, even a third F-125 FAST CHARGER

ALLEN LEADERSHIP NEVER MORE FULLY DEMONSTRATED

Allen's new F-125 Fast Charger pays off handsomely — that's the story coming from all parts of the country.

The reason: Here's a fast charger *electronically controlled and FULLY AUTOMATIC* — saving you time, eliminating the need for close attention.

Yes, once again Allen leads the field by perfecting equipment which incorporates all the features you need to make MORE money.

No wonder many service stations have already reordered!

FULL
100 AMPERE

Completely Automatic!

. . . Ask for Demonstration . . . Your Allen Jobber has a Floor Sample

ALLEN ELECTRIC & EQUIPMENT CO., KALAMAZOO, MICHIGAN

WATCH THE LIGHTS — that's all you do — that's all your customer does!

Another Famous **ALLEN** PRODUCT

Almco Universal Hoist

A mobile hoist of 1 ton rated capacity which can be used for transporting as well as lifting is announced by Almco, Inc., Albert Lea, Minn. Suggested uses include handling heavy chucks, dies and machine parts, hoisting cars for repair work, and loading and unloading trucks. One man is required for both lifting and transporting.

Known as the Almco Universal Hoist, this unit is of welded tubular steel construction and is designed to withstand abuse. It rolls on four heavy-duty ball bearing casters, and the U-shaped base is designed to fit easily into tight places.

This hoist can be furnished with a hand-operated worm-drive winch or with an electric or chain hoist instead. It is regularly available in both 7 ft. and 9 ft. over-all height, with greater heights available on special order. Almco, Incorporated, 231 East Clark St., Albert Lea, Minn.

Firestone Blowout Proof

A wire-corded heavy duty tire that is claimed to be practically blowout proof has been announced by The Firestone Tire and Rubber Company of Akron, Ohio.

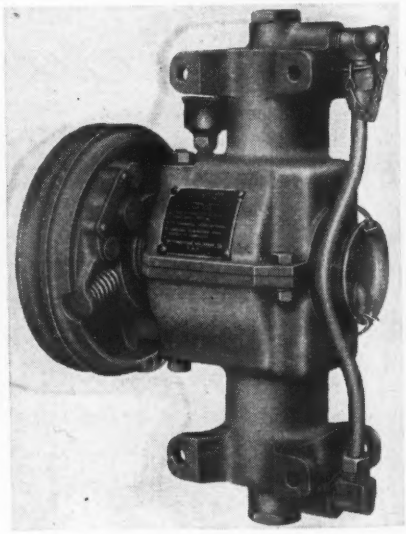
The tire has been tested in various kinds of actual heavy duty service and is designed to give long mileage in such fields as logging, strip mining and similar activities.

Fine metal wire cord with high tensile strength is bonded with rubber to provide the foundation of the new tire. Every cord in every ply is five times as strong as the strongest cord heretofore used in conventional tires. Because of the strength of the metal, few plies are required, and the walls of the tire are consequently thinner to contribute toward cooler running.

Westinghouse Light Weight Air Compressor

A light weight, compact unit, the new Westinghouse T-1 Air Compressor is designed for truck or tractor engine mounting with belt drive from the generator pulley.

Displacement is 3.27 CFM at 600 RPM. Drive is controlled by an



automatic centrifugal clutch. When the compressor is used, the clutch is engaged manually by slipping a pin, and automatically disengaged by speeding up the engine. Complete kits are available for current models of ½ to 1½ ton trucks. Westinghouse Air Brake Co., Industrial Division, Wilmerding, Pa.

10 of 11!

...Look into the Unique DeLuxe Features for the Why of this Unique Record!

10 of 11 Winners of the 1946 National Bus Transportation Awards for Efficiency are DE LUXE USERS!

It's not easy to win a Bus Transportation Efficiency Award. Every factor in motor operation contributes its share toward winning or losing. It is significant, therefore, that year after year the big majority of winners are DeLuxe users. The reason:

In winning the award of daily peak efficiency in ANY automotive field, CLEAN OIL is a mighty factor... not filtered or strained oil but CLEAN oil. That's where DeLuxe helps. DeLuxe is not merely a sludge filter but a sludge PREVENTER; it even cleanses oil of its microscopic sludge-forming asphaltenes.

Such thorough cleansing requires ENOUGH contact with ENOUGH of the RIGHT KIND of filter material. The DeLuxe L-O-N-G oil travel, Controlled Flow, and non-collapsing, spring-supported filter cartridge insures that. Moreover, DeLuxe cartridges stay efficient because sludge goes into the sump, not into the cartridge... DeLuxe Products Corporation. 1404 Lake Street, LaPorte, Indiana.

2044 R

Marks the DeLuxe Users...10 of 11 Award Winners!

☆ ST. LOUIS PUBLIC SERVICE CO., St. Louis, Mo. ☆ CAPITAL TRANSIT CO., Washington, D. C. ☆ THE CONNECTICUT CO., New Haven, Conn. ☆ SAN ANTONIO TRANSIT CO., San Antonio, Texas ☆ TECHE GREYHOUND LINES, New Orleans, La. ☆ HARRISBURG RAILWAYS CO., Harrisburg, Pa. ☆ WORCESTER STREET RAILWAY CO., Worcester, Mass. ☆ THE BRISTOL TRACTION CO., Bristol, Conn. ☆ BOSTON, WORCESTER AND N. Y. ST. RAILWAY CO., Framingham, Mass. ☆ ST. JOSEPH LIGHT AND POWER COMPANY, St. Joseph, Mo.

DELUXE *Oil Filter*

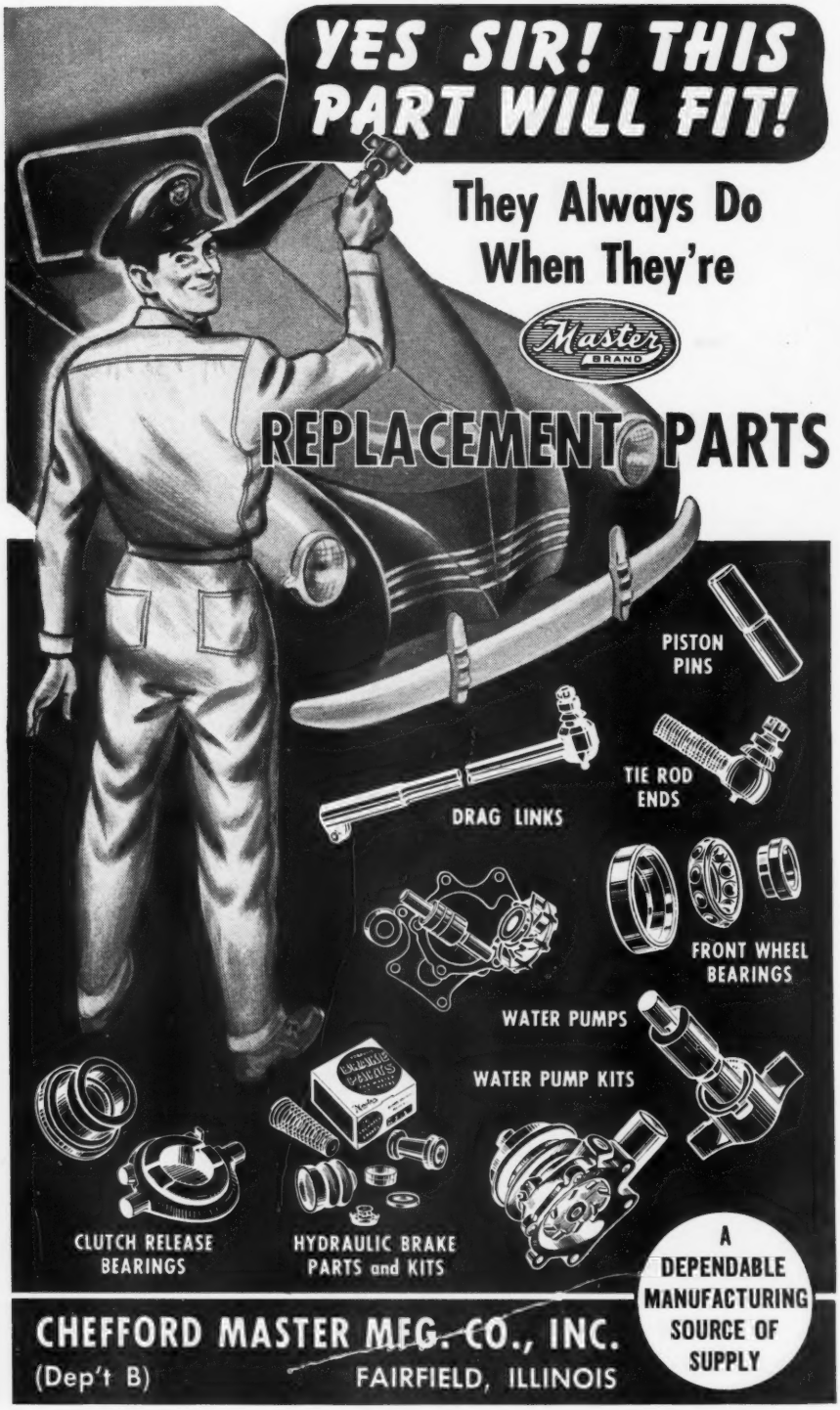
DOES MORE THAN STRAIN OIL ... MORE THAN FILTER OIL
ACTUALLY CLEANSES OIL

Thor's "Multi-Matic" Kit

Thor's automotive line now includes a complete series of portable electric tools, plus the "Multi-Matic" kit, a combination of seven air tools. This group includes drills in sizes from ¼ in. to 1¼ in., drill stands, sanders, grinders, polishers, screw drivers, nut setters, bench grinders, and so forth. The "Multi-Matic" kit includes many of these tools, equipped with one motor unit and seven interchangeable attachments. The Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago 6, Ill. are the makers.

Cords Rings

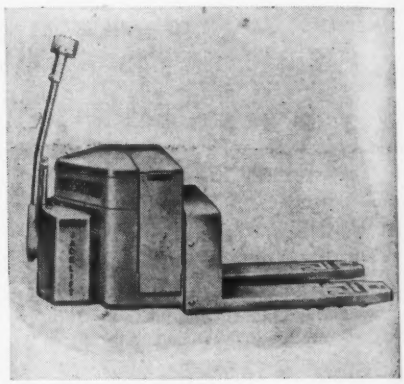
The Cords Piston Ring Manufacturing Company of San Diego 1, California, has developed two new type Cords rings. The ventilated oil control ring and the compression seal ring. They have also developed a heat treating process called "Thermo-Forming" which reshapes the ring so that it is perfectly round when compressed to the cylinder diameter, to assure a perfect seal at the time of installation. According to the manufacturer, this eliminates the necessity for a long "break-in" period which was formerly experienced by users of the steel segment ring.



Lewis-Shepard Jacklift

Vertical Handle operation and the Electric Brake are featured in Lewis-Shepard's new Power Jacklift, built in both Platform and Pallet Models.

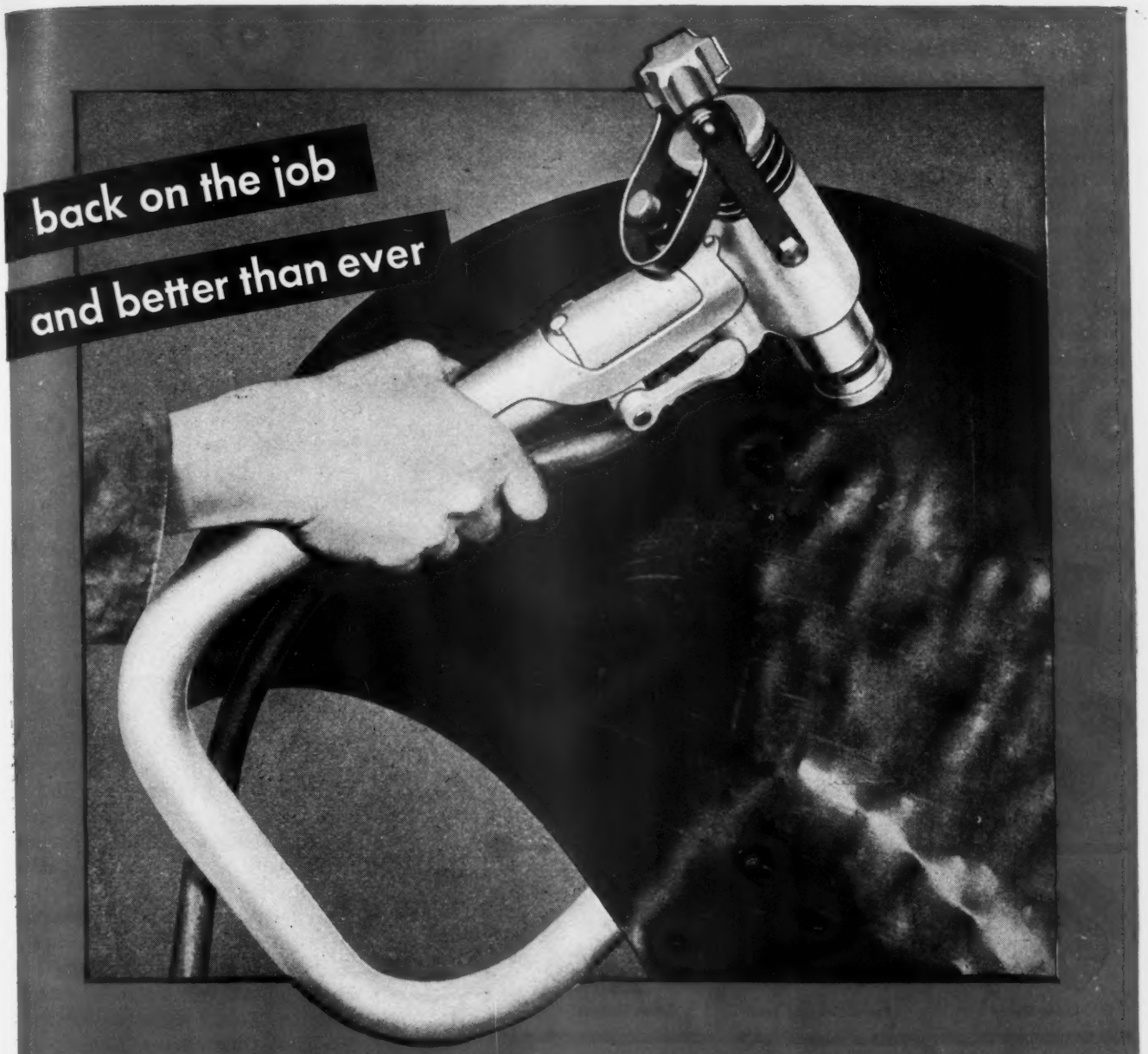
The Power Jacklift is an electrically operated Hand Lift Truck with



electric button operation located in the handle head. In the vertical position or when lowered, the handle has a steering arc of 200 degrees. Both models are driven by an electric master drive unit that is completely replaceable. The trucks are available in several lengths and in both wide and narrow models. Lewis-Shepard Products, Inc., 248 Walnut Street, Watertown 72, Mass.

Federal-Mogul's Copper Alloy Bearing Lining

Federal-Mogul Service, of Coldwater, Mich. is offering a new type copper alloy engine bearing lining. A development of powder metallurgy, the material is bonded to the steel in powder form. An unusually strong bond between the steel back and lining is claimed for this product as a result of special processing and a high degree of purity of the alloy employed. Already in general use in the field, it is said to be especially applicable to sleeve-type bearing service.



WATERVLIET HIGH SPEED PNEUMATIC VIBRATOR

It's bigger business and better profits in body repair—now that the Watervliet High Speed Vibrator is again available. This is the tool that restores smooth, perfect finishes to bodies and fenders 50 to 70% faster than any other tool on the market.

Whether you're "ironing out" a simple fender dent or a badly smashed body, you can rely on Watervliet's 10,000 vibrations a minute to do the job in a superior way—quickly. The Watervliet High Speed Pneumatic Vibrator is light, easy to operate—applicable to hoods, panels, turret tops—as well as fenders and bodies.

Remember, this is an *improved* tool made even better than before or during the war—evidence enough of Watervliet's continued leadership in the field of pneumatic body and fender tools. Orders filled as rapidly as full production will allow. Write for yours *today*.

WATERVLIET TOOL CO., Inc., 1343 Broadway, Albany 1, New York

The Acme Color Eye

Acme White Lead and Color Works, of Detroit, has introduced the Acme Color Eye, Deluxe Model, claimed to be faster, simpler and more accurate than any existing paint measuring device.

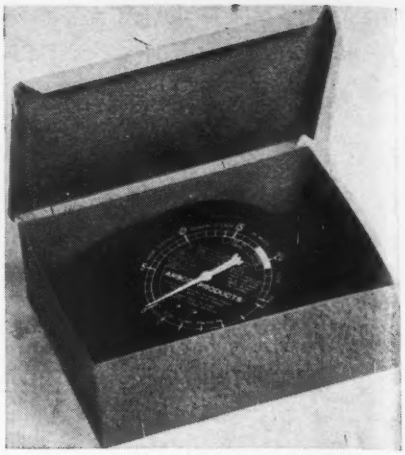
Designed to measure paint in any standard can from 3 to 16 in. high, this unit operates by means of a light beam reflection from a light rod, which goes out as each color is poured into the mixing container to the correct level.

Four Arsco Items

The Arsco Mfg. and Sales Corp., 453 Tenth Ave., N. Y. C. 18, has added four items to its line.

The Arsco Compressometer is fitted with a rubber insert cone that fits all spark plug holes. The check valve retains the pressure until the release valve is operated. Price $3.85.

The new Compound Meter, for testing fuel pumps and carburetors is designed to check loose valve guides, choked muffler, leaky head gaskets, sticky and leaky valves, and so forth. Price $4.55.



The Mechanic's Helper, an all steel unit 24 in. long by 12 in. high, combines seat and service tray. It is on casters and may be used as a tool toter.

The 26-blade feeler gage markets for $.84.

Sterling Sander

The Sterling 1000 Portable Electric Sander is especially adapted to the featheredging and sanding of under coats of automobile finishes. Covering the entire range of abrading from coarse sanding to lapping and finishing, the Sterling Sander is light in weight and employs a flexible sanding pad which detaches from the machine by pulling out a latch. Power is supplied by a 1/5 hp 115 or 230 volt Universal motor. Sterling Tool Products Company, 363 East Ohio Street, Chicago 11, Illinois.

The Clayton Moto-Mirror

A new model chassis dynamometer, the Moto-mirror is offered by the Clayton Manufacturing Company, El Monte, Calif. Moto-Mirror is a service tool that provides the means of testing overall car performance under actual driving conditions. The car is driven on to a set of rollers and tested against road conditions ranging from heavy traffic jams to steep mountain grades.

Diagnosis and tune up are accomplished while the vehicle is operating under road conditions and the results, it is stated by the maker, are highly satisfactory, eliminating comeback and proving the quality of work performed.

Whatever your problem — heat, corrosion, impact or abrasion — Stoody hard-facing alloys will give you the most effective solution. With one application of these wear-retarding materials the service life of both new and worn parts is increased many times.

For further details *write for Catalog No. 40* — Air Reduction, General Offices, 60 East 42nd Street, New York 17, N. Y. In Texas: Magnolia Airco Gas Products Company, General Offices, Houston 1, Texas. Represented Internationally by Airco Export Corporation.

AIRCO **AIR REDUCTION**

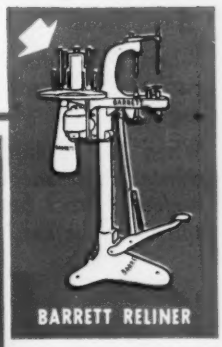
Offices in All Principal Cities

HEADQUARTERS FOR OXYGEN, ACETYLENE, AND OTHER GASES . . . CARBIDE . . . GAS WELDING AND CUTTING APPARATUS AND SUPPLIES . . . ARC WELDERS, ELECTRODES AND ACCESSORIES

A Double Profit On Every Brake Job!

A Barrett Brake Drum Lathe lets *you* keep the 90% gross profit someone else makes on all drum jobs you send out.

ASK YOUR JOBBER FOR DETAILS!



BARRETT EQUIPMENT CO.

The World's Finest Brake Service Equipment

TWENTY-FIRST AND CASS • ST. LOUIS 6, MISSOURI

Send For FREE Eye-Opener On Brake Service

Papco Tube Flare Tool

Among the features of the Papco Tube Flare Tool are a clamp with a capacity 3/16 in. to and including ⅝ in., each measurement being stamped on the clamp. The tube clamps positively with pressure applied opposite the center line, to prevent spring-out of the flare block under pressure. A flush underside of the tool permits close flares of short tubes while a full swivel cone is a standard feature.

It is fitted with locking "plier-like" handles to permit easy operation and better leverage. It will perform single flaring, double flaring and swedging. It is a product of the Penn Brass & Copper Company of Erie, Pa.

Martin-Senour Cabinet

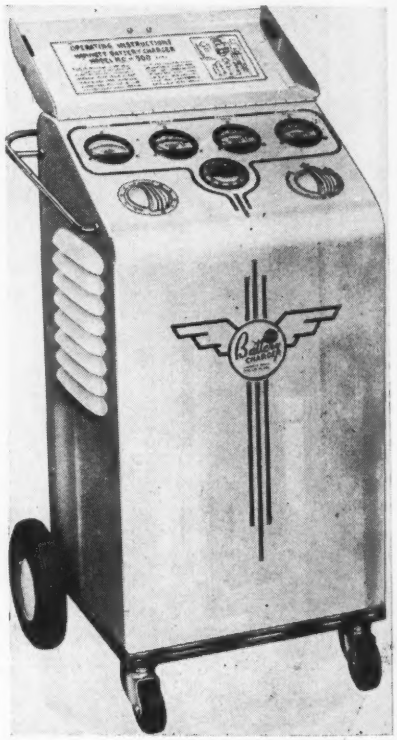
A newly-designed lacquer cabinet is offered by Martin-Senour Company 2520 South Quarry Street, Chicago 8, Illinois. This unit has been designed to keep paints in order, to make them easy to reach, and to facilitate matching in spot repair refinishing projects.

Fully stocked, the cabinet contains 48 pint cans. Ready made assortments for four auto makes have been assembled by the manufacturer. Other lacquers, however, may be selected to fit any shop's special requirements. This cabinet is 36 in. wide, 30 in. high, and 5 in. deep.

Shops already supplied with Martin-Senour factory matched colors in 50, 100 and 150 pint assortments may obtain the cabinet without contents on a share-the-cost basis.

Hammett Charger

The model HC-500 Battery Charger produced by the Hammett Electric Manufacturing Company of Kansas City, Mo., gives a complete battery analysis by means of



a new Voltmeter which tests the individual cells under load and no load conditions. Three of these individual cell testing voltmeters are mounted on the dial plate. These meters have such an expanded dial reading that the minutely small voltage range is enlargened to a range of approximately one-inch per one quarter volt. The markings on the dial are broken up into spaces giving the percentage of charge in the cell.

Extra Performance Value — Plus Extra Merchandising Advantages

Mechanical superiority car owners can see, combined with performance advantages no other brake lining can offer. No wonder car owners who know select GATKE Grooved DURA-BLOK Brake Lining.

When you point out the Grooves a *car owner can see* what you are talking about.

When you explain how the Grooves *eliminate extraneous matter for more perfect contact between brake lining and drum* he can understand that.

When you tell him *uniform contact means smooth, non-grabbing action, quiet operation and maximum holding power,* that's what he wants.

And when he drives away with a GATKE Grooved DURA-BLOK Brake Reline *you can bet he will specify* "the Brake Lining with the Grooves" for his next reline.

Ask your Jobber about GATKE Grooved DURA-BLOK in Blue Ribbon *CUSTOM-BILT* Sets and Rolls, or write.

Gatke CUSTOM-BILT BRAKE LININGS
BLOCKS SETS ROLLS SHEETS
GATKE CORPORATION
228 N. La Salle St., Chicago 1, Ill.

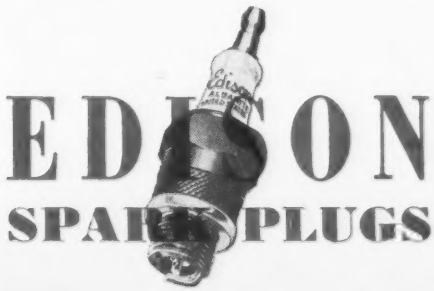
FEBRUARY 11, 1947

100TH ANNIVERSARY OF THE BIRTH OF THOMAS A. EDISON

In the one hundred years since his birth, Thomas Alva Edison's name has been followed by various epithets —scholar, benefactor, genius, inventor—but the one this great man most appreciated and most deserved was "perfectionist."

Perfection can be achieved only by hard work. Edison himself said that genius was 2% inspiration and 98% perspiration.

Thomas A. Edison was never satisfied short of perfection. Nothing was too much trouble to insure that the product he put on the market was the most perfect product that could be produced. Today, Edison industries abide by that same high standard of quality. "Performance as great as the name" has always been the proud motto of Edison Spark Plugs.



EDISON-SPLITDORF CORPORATION, WEST ORANGE, NEW JERSEY

"BEST SELLERS"

EXTRA PROFITS
with **McKAY**
Tire Chain Accessories

- **McKay Cross-Links**
- **McKay Chain Pliers**
- **McKay Lucky Links**

It's good business to feature McKay *Multi-Grip* and *Regular* Tire Chains. Everything about McKay Chain sales is right for you—a performance-proved product . . . consumer acceptance . . . ready demand . . . good profit.

Your job of selling is really simple with this "best selling" line because car-owners everywhere prefer the better traction, the more miles of wear and the added convenience of the easy-to-put-on *Klip-Lock* fastener found only in McKay *Multi-Grip* and *Regular* Tire Chains.

DISTRIBUTED THROUGH BETTER AUTOMOTIVE JOBBERS

THE McKAY COMPANY
PITTSBURGH 22, PA.

WELDING ELECTRODES . COMMERCIAL CHAINS . . . TIRE CHAINS

GENERAL SALES OFFICES — YORK, PA

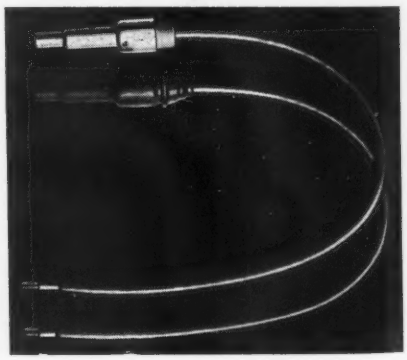
Sherwin-Williams

Three new Sherwin-Williams automotive rubbing and polishing compounds are now in quantity production. They include a fast-cut lacquer hand-rubbing compound, a synthetic hand-rubbing compound, and a mechanical wheel polishing compound. According to the Sherwin-Williams Company of Cleveland, Ohio, these compounds produce a scratch free, high lustre on newly refinished cars or on finishes that are dingy and faded from wear.

The synthetic enamel rubbing compound is for use on jobs where the original finish of the car is a synthetic enamel and the spot repair job is done with lacquer. It has a mild abrasive action which makes it possible to blend the lacquer over the synthetic finish. Other additions to the Sherwin-Williams line include a weathering chart and a high-speed paint mixer for automotive shops. A feature of the paint mixer is a coupler which makes continuous operation possible when the operator is inserting or removing paint cans from the machine.

Charger Thermostat

United Electric Controls Company, 71 A Street, South Boston, announces an immersion-type thermostat designed for the Type MI. This thermostat was designed for close temperature control on quick battery chargers where overheating would ruin the battery. It is also applicable, according to the maker, for controlling the temperature of strong liquids, gases and hot



plates. It is normally supplied with a neoprene sleeve to give protection to the unit for applications injurious to brass.

AUTO WATER TREATMENT

Protects Cooling System Against Rust and Corrosion

RADIATOR CLEANSER

The Patented Cleanser That Cleans Thoroughly

AUTO RADIATOR SEAL

Stops Leaks Permanently

To add it up another way—Quality products plus consumer demands equal sales, steady sales, repeat sales. And that equals higher profits for you.

E. F. DREW & CO., Inc.

Automotive Products Division

MAIN OFFICE: 15 E. 26th ST., NEW YORK 10, N. Y.
FACTORIES at BOONTON, N. J. & ROCKLAND, ME.

Other offices in Boston, Chicago, San Francisco, Los Angeles, Dallas, St. Louis

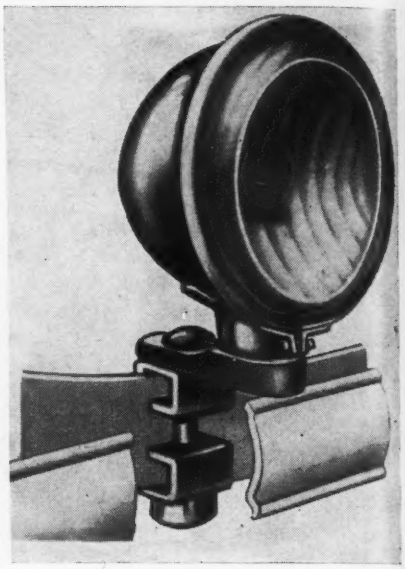
Kidde Extinguisher

A fire extinguisher containing 5 pounds of fire-killing carbon dioxide in a recently developed light-weight cylinder is under production by Walter Kidde & Company, Inc., of Belleville, N. J. This new portable replaces the old 4 pound type, giving an extra pound of carbon dioxide while reducing the average charged weight by 2½ pounds. The 4 pound portable weighed 18 pounds; whereas the new 5 pounder weighs but 15½ pounds. Other portables are available in 2½, 10, 15 and 20 pound sizes; and wheeled units in 50, 75 and 100 pound sizes. All Kidde extinguishers are approved by both the Underwriters' and Factory Mutual Laboratories for flammable liquid and electrical fires.

Teleoptic Lamps

The Teleoptic Company of Racine, Wis., has augmented its line with two units, the "Rear-King" and the "Stop-King."

Designed for the attachment to the rear bumper support, the Rear-King is finished in automotive chrome and is equipped with the Teleoptic ribbed reflector unit with clear lens of railway signal heat-treated glass. Lamp has a reinforced saddle mounting, and the bolt is protected with a theft-proof skirting.



The Stop-King bracket type stop light is also equipped with the Teleoptic reflector unit. The lamp is furnished with a vibration-proof universal mounting bracket.

API Garage Horses

Rated for a three-ton static load, and capable of supporting a 50 per cent overload, Standard-Duty garage horses, made by Associated Producers, Inc., Detroit 2, Michigan, are adjustable for five support positions from 1 in. to 19¼ in. They are packaged in pairs, weigh 13 pounds per pair, and sell for 6.95 per pair, F. O. B. factory.

Kem Timing Devices

For Ford V8's, Mercuries and Lincoln-Zephyrs, from 1932 to 1946, the Kem Timing Device, a product of the Kem Manufacturing Company, Inc., New York, is a simplified portable unit that uses either a storage battery or a bell transformer for a source of current. The dealers price is $11.25.

★ FASTER TESTING
★ FASTER CHARGING
★ FASTER SELLING

THE NEW "Hi-Rate 180"

- Accurate 30 Second Test
- Tests *Before* Charge
- Automatic Time Switch
- *Exact* Charging Time
- High Rate Discharge

The Marquette "180" Hi-Rate Charger combines all the essentials to give you Speed where you need it most—Speed in Testing! You and your customer know in a jiffy the *Exact* Battery Condition and *Exact* Charging Time. Entirely automatic, "Just set it and forget it" . . . the Automatic Time Switch shuts off charger at end of charging period.

Your Best Battery Salesman—the Marquette Hi-Rate sells Charging Service and New Batteries at every turn. Individual Cell Check sells batteries on the spot! Cycling Rejuvenates sulphated batteries.

100 ampere capacity even on low line voltages. New type sensitive circuit breaker protects both battery and charger against accidental overloads and reversed leads.

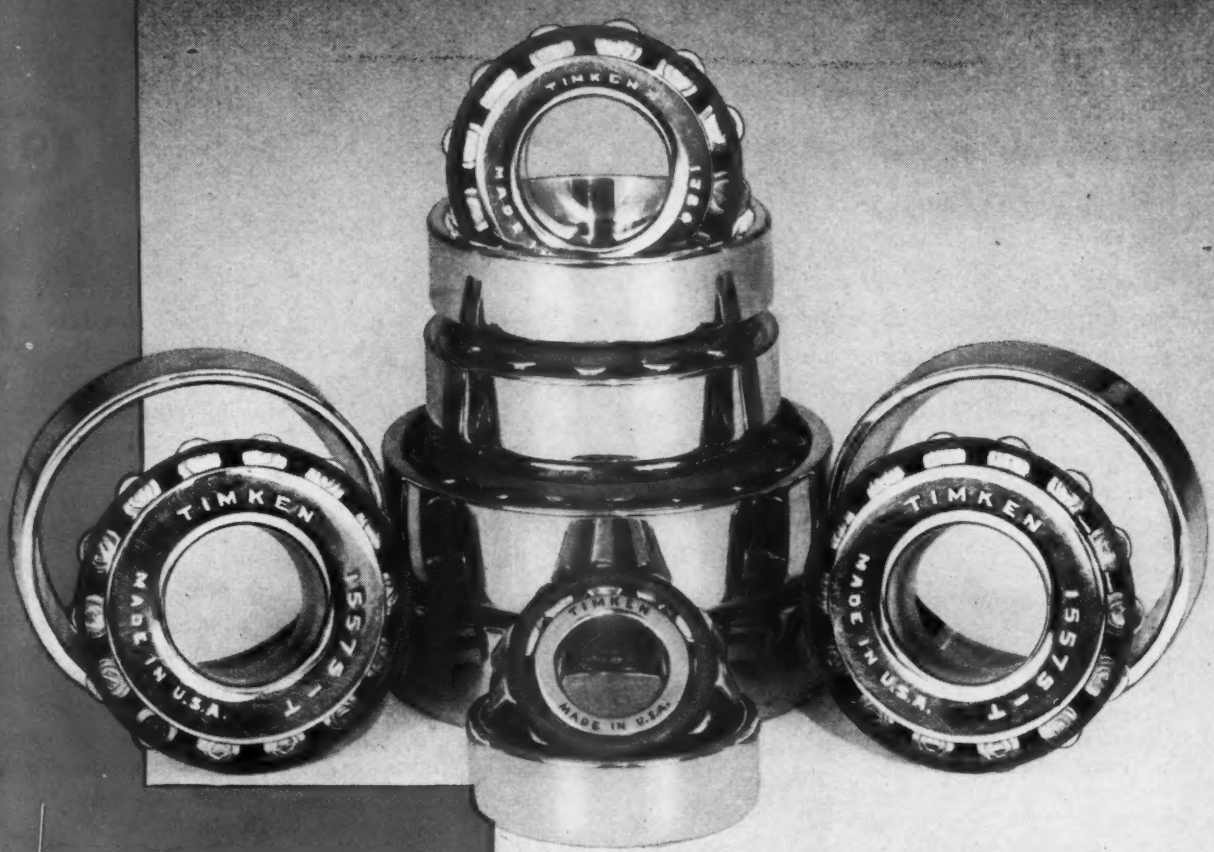
Ask your Marquette Distributor to show you the new Marquette "180" Hi-Rate—he will point out its many Money Making features.

SOLD EXCLUSIVELY THRU THE NATION'S LEADING DISTRIBUTORS

MARQUETTE
REGISTERED U.S. PAT. OFFICE
Automotive EQUIPMENT
BATTERY CHARGERS
A.C. ARC WELDERS · ELECTRODES
GAS WELDING And CUTTING EQUIPMENT
ACETYLENE GENERATORS · ACCESSORIES
MARQUETTE MFG. CO. INC.
MINNEAPOLIS 14, MINN.

The Trade-Mark TIMKEN

IS A MARK WHICH IDENTIFIES THE FINEST
TAPERED ROLLER BEARINGS EVER MANUFACTURED
See that it is on every bearing you use



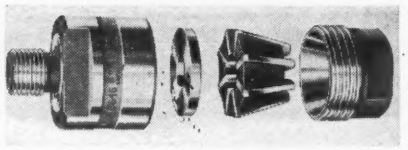
TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS

THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO

Jacobs Drill Chuck

A heavy duty drill chuck, in which a web of neoprene synthetic rubber keeps the jaws in alignment and permits one chuck to take a wider range of drill sizes, has been developed by the Jacobs Manufacturing Company, Hartford, Conn.

In its function, the resilient material replaces the flexible spring steel collet shank of the traditional single purpose type of drill chuck. The rubber is bonded to the steel jaws and passes through the anchoring holes in them, a design which makes the collet or inner



socket of the chuck a compact, conical unit. The "Rubber-Flex Collet," as it has been named, is tightened by a screw mechanism which forces it forward into the funnel-shaped nose of the chuck. As soon as the chuck is loosened, for changing drills, the neoprene web pushes the jaws apart and releases the drill shank.

Plexiglas Wind Deflector

Designed to eliminate drafts and cross winds, a Plexigas wind deflector for cars has been introduced by the Nu-World Products Company, Huntington Beach, California.

Called the Noblo Wind Deflector, the unit consists of a single sheet of transparent Plexiglas, curved to fit within the front window frame. Several models are available so that any car can be fitted. According to the makers, the deflector protects rear seat passengers from front-window drafts without interfering with normal operation of the window and the driver's window can be down without discomfort to others. Each deflector is held in place by metal clips. The price is $4.95.

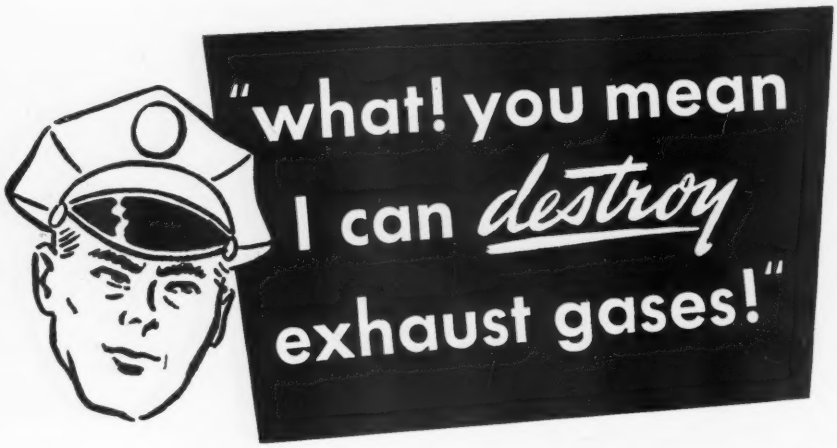
Inland Weather Strip

The Inland Manufacturing Division of General Motors Corp., Dayton 1, Ohio, has introduced a seal-sealing weather strip that can be installed without cement in three operations for permanent weather-proofing of windshields and windows.

The strip is set on the body panel —then the glass is fitted into place and a rubber pressure band is threaded into the weather strip with the zipper-like motion, creating a mechanical lock to hold the glass in place. It is available in standard sizes for application in aircraft, motor vehicles, marine equipment, railroad coaches, window sash, and other uses.

Wilmington Compressor

Weighing approximately 33 lbs., and powered by a ¼-hp motor, the new portable Wilmington air compressor, a product of the Auto Compressor Company, Wilmington, Ohio, operates at 40 lbs. continuous pressure and delivers in excess of 2 cubic feet per minute. It is of the diaphragm type, self-lubricating, and without exposed moving parts.



Yes, Mr. Shop Owner, the air in your shop can now be free from headache producing exhaust gases, without opening doors and windows.

General Ozone Regulated Ionizing Equipment electrically DESTROYS EXHAUST GASES—leaves air fresh . . . clean! The recognized menace to the health and efficiency of workmen from these exhaust gases is quickly eliminated.

Think what this means in improved working conditions, fuel savings, better health, increased efficiency. Hundreds of car dealers and garage men have installed these units and now work in clean, fresh, ionized air. Nothing to set up . . . no chemicals or refills . . . no special wiring. Just plug it in and it goes to work!

Write today for complete information.

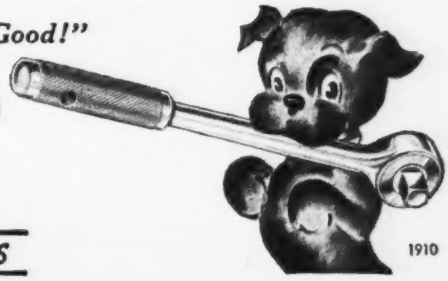
GENERAL OZONE CORP.
17 West 60th St., New York 23, N. Y.

The handsome, efficient triple-chrome-finish DURO-CHROME 80-tooth-action ratchet wrench . . . stronger . . . handier in the tight spots . . . typical of the Duro Tools of Tomorrow.

There's ONE THING Men the World Around Agree Upon:
"DURO Tools are Doggone Good!"

Wearing a satin finish such as tools of this kind never had before . . . matched and balanced so that they seem to come alive in your hand, as obedient as your fingers . . . precisely built, to do exactly what a skilled man wants done . . . that's what you find in the perfected Duro tools. All Duro resources—advanced plant equipment, widest technical background, world experience, AND THE WILL TO EXCEL—are focused on making Duro's regular output of tools finer than anything pre-war—and Duro tools were "Doggone Good" then, in any man's language! . . . **DURO METAL PRODUCTS CO., 2649 No. Kildare Ave., Chicago 39, Illinois**

"Doggone Good!"



DURO TOOLS (HAND TOOL DIVISION)

The Mechanic's Best Friend

OVER A BILLION BUILT SINCE 1916

ALSO MAKERS OF DURO MACHINE TOOLS

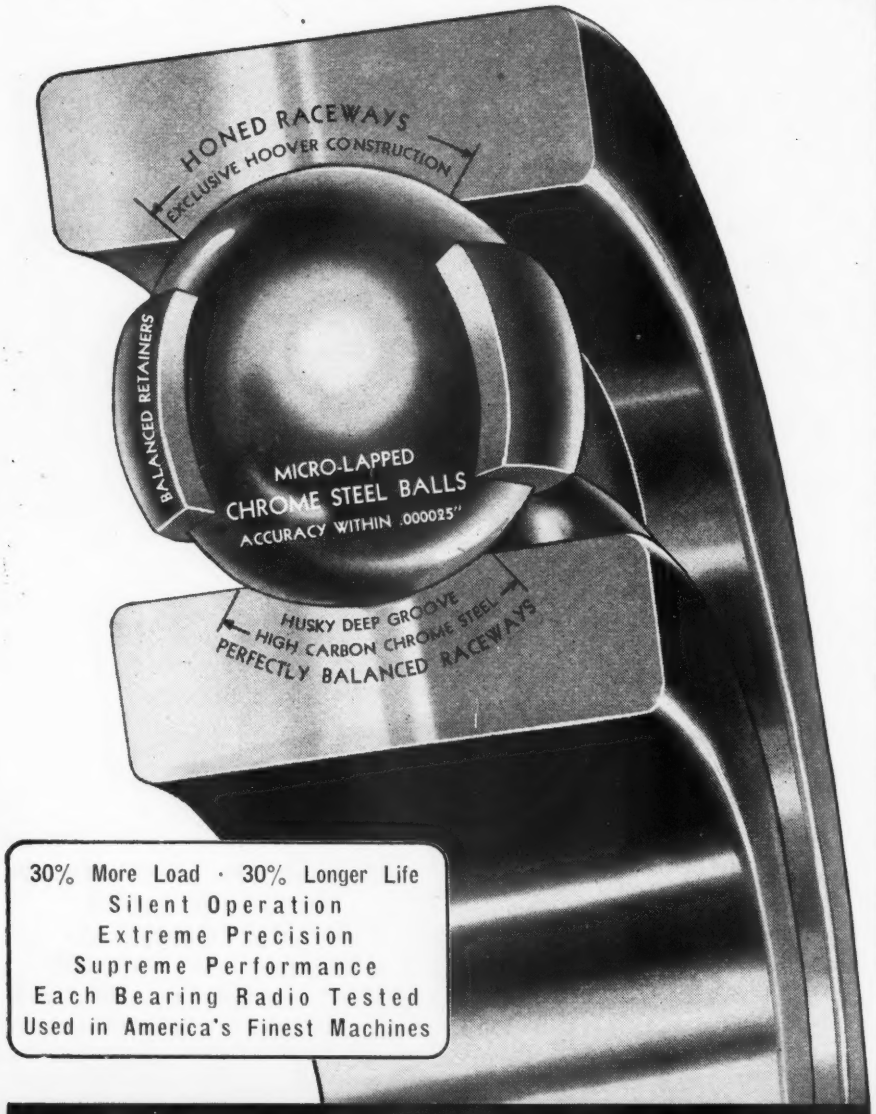
1910

Rivetless Brake Linings

The Permafuse Corporation of 153 Pierrepont Street, Brooklyn 2, New York, has a brake bonding unit which eliminates the necessity of using rivets to attach brake linings to brake shoes. In the Permafuse process a strip of specially prepared tape is clamped between the lining and the shoe and the two are permanently fused together in the electric bonding oven into one assembly. According to the manufacturer, this operation can be performed by men possessed of no more special skill than is required by the old method of riveting. The advantage claimed for the Permafuse process include: the elimination of rivets and the scoring caused by scraping rivet heads; improved heat dissipation; less drum scoring from dirt and grit which collect in the counterbores above the rivet heads; increased life of the brake linings by permitting the use of all the lining right down to the brake shoe.

So much more...for so little more

AMERICA'S SUPER FINE BALL BEARING



30% More Load · 30% Longer Life
Silent Operation
Extreme Precision
Supreme Performance
Each Bearing Radio Tested
Used in America's Finest Machines

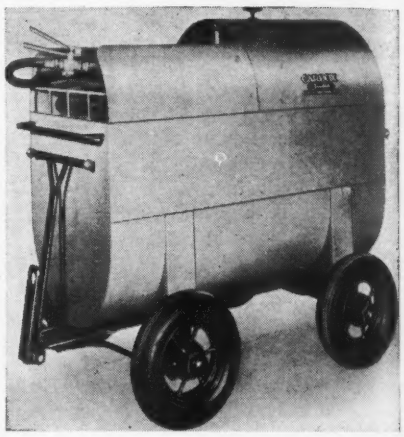
HOOVER

The Aristocrat of Bearings

HOOVER BALL AND BEARING COMPANY, ANN ARBOR, MICHIGAN

Cardox Transitank

The Cardox Transitank, product of the Cardox Corporation, Chicago 1, Ill., is a portable fire fighting unit capable of carrying three-eights of a ton of Cardox CO_2.



Available in three models, the Transitank is designed to apply minus 110 degree F. Inert carbon dioxide "Snow." (Finely divided particles of dry ice) and vapor at the rate of 300 pounds per minute.

Described by its manufacturer as a small fire department in itself, the Cardox Transitank is especially designed for industries and operations requiring a mobile unit capable of traveling comparatively great distances quickly. Capable of being drawn by plant personnel or in one model, operated by a small gasoline engine, the Transitank features the patented Cardox "Snow-Separation" nozzle stated to completely separate CO_2 snow and vapor.

New Hand Vise

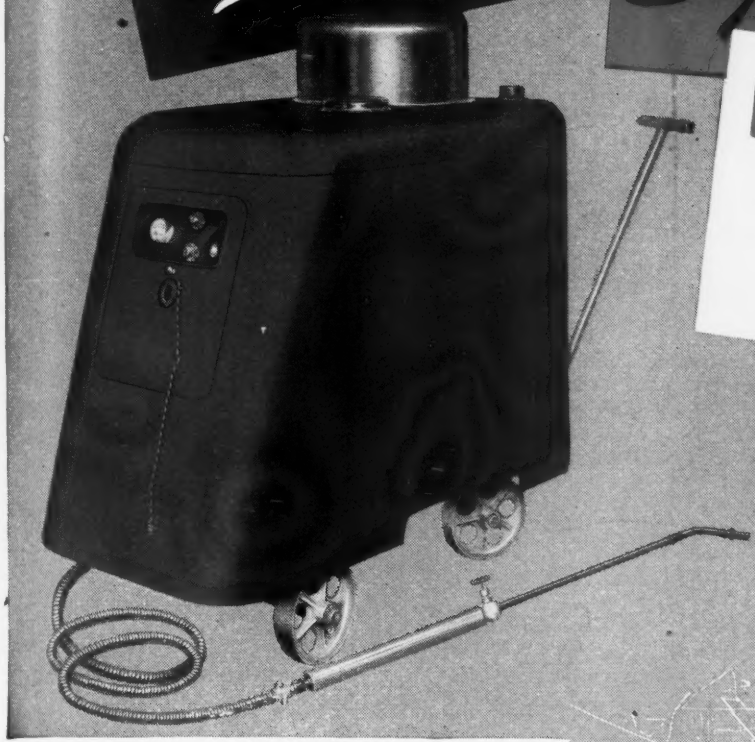
To simplify the handling of small parts and pieces, the Chicago Tool and Engineering Company of 8383 South Chicago Avenue, Chicago 17, Ill., has introduced a new aluminum hand vise which grips solidly, yet will not mar or scratch the work. Seven ounces in weight and 5 in. long, it has 1½ in. wide jaw faces, which open to 1½ in. and are machined to provide a true surface. Designated as the Palmgren No. 15 Hand Vise, it is designed for use by tool and die makers, metal wood workers, mechanics and others handling small pieces. It is now in volume production.

It's Here!

The New Super Capacity

HYPRESSURE Jenny

INSTANTANEOUS STEAM CLEANER

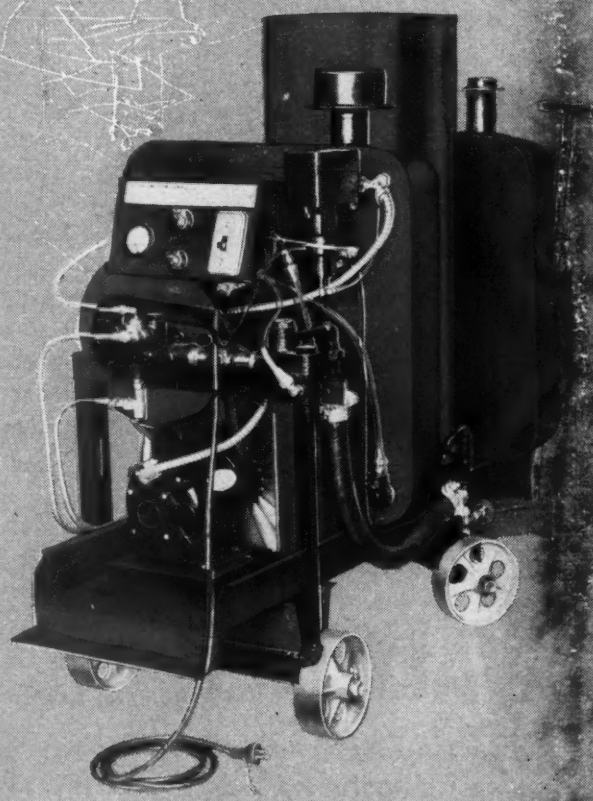


- ★ IMPROVED
- ★ STREAMLINED
- ★ MORE POWERFUL
- ★ MORE EFFICIENT
- ★ FULL-VIEW CONTROL PANEL
- ★ AVAILABLE WITH OR WITHOUT MACHINERY COVER

It Cleans Instantly, Thoroughly, Economically

- Mill and Industrial Machinery and Equipment
- Truck, Bus and Passenger Car Motors and Chassis
- Production and Farm Machinery
- Floors, Walls, Windows, Skylights
- Building Exteriors, etc.

. . . 8 to 10 times faster than hand-cleaning methods.



Cleaning is accomplished by a highly atomized mixture of steam, hot water and cleaning compound applied under pressure through a spray nozzle.

HYPRESSURE JENNY is a sturdy, compact, portable unit easily moved from one cleaning job to another. Oil-fired or gas-fired types are optional; and the only requirements for operation are an electric current outlet and a hose connection to water supply. It will pay you to get complete facts about this new super-capacity steam cleaner. Write for new specification circular for Model JO Hypressure Jenny, just off the press. There is no obligation.

Hypressure Jenny Division

HOMESTEAD VALVE MANUFACTURING C

P. O. Box 95 Coraopolis, Pa.

Her Evening Dress

—by Milgrim

The Motor Oil

for her car

—by VALVOLINE

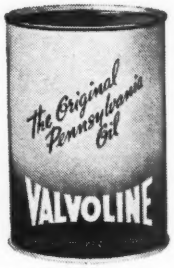
Valvoline Premium Quality Motor Oil is not only for custom-built cars. Valvoline is recommended to every owner who gives his car better than usual care—who insists on positive protection for his motor. Though necessarily restricted in quantity, Premium Quality Valvoline Motor Oil will be found at one or more of the better dealers in your community.

VALVOLINE

The Original Pennsylvania

MOTOR OIL

Unconditionally Guaranteed



Freedom-Valvoline Oil Company, Dept. 12A, Freedom, Pennsylvania

New York, Toronto, Pittsburgh, Detroit, Atlanta, Cincinnati, Chicago, St. Louis, Los Angeles, San Francisco, Portland, Seattle, Vancouver, B. C.—Refineries at Butler; Freedom, Pennsylvania

Something New On The Wall

A brand-new idea in arty calendars of buxom, scantily-clad lassies is appearing in sales rooms and offices of many tire dealers.

It is a "Strip Tease" month-by-month recorder developed by Hynes Pitner, vice-president in charge of sales of Pharis Tire & Rubber Co., Newark, Ohio. The calendar is believed to be the first to adapt the technique of Gypsy Rose Lee and Ann Corio to date-making.

January shows Phanny Pharis as she receives a new wardrobe from a messenger for the new year. She dons it all in February and comments:

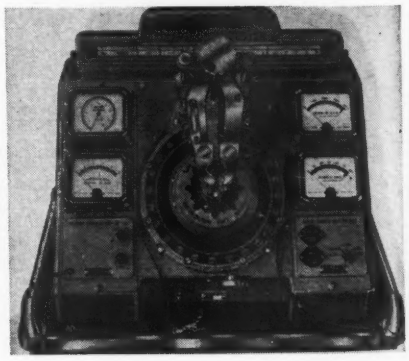
"One last fling in the grand style before I take off like a P-38."

In March—with no help from the wind—Phanny starts to shed and she peels off one intimate garment each month. In five months' time she resembles the young lady in the famed "September Morn" painting. That brings the calendar up to September.

In October, the artistic imagination of Phanny's creator discloses her even a step beyond nudity—in a skeleton impression.

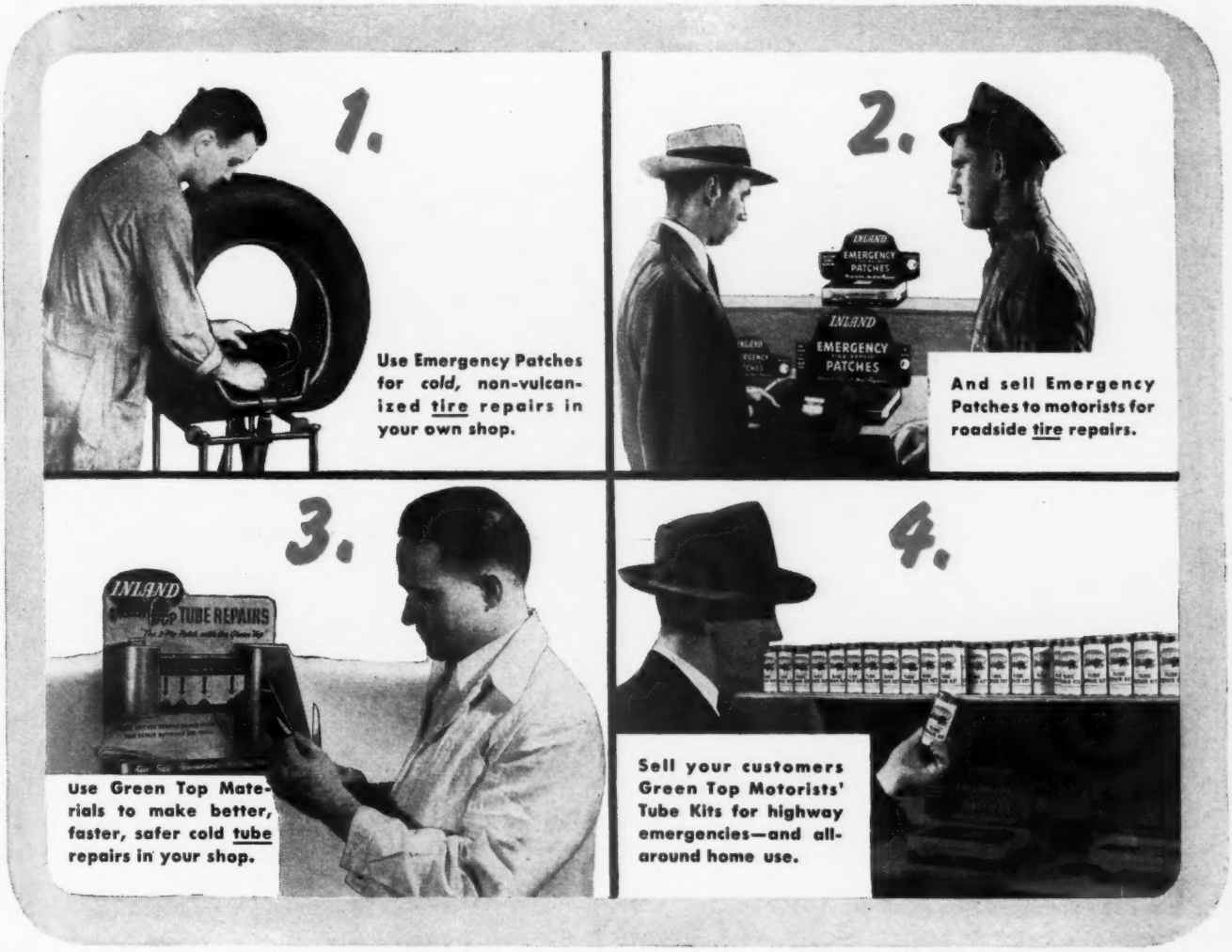
Sun Distributor Tester

The Sun Distributor Tester, product of the Sun Electric Corporation, Chicago 31, Ill., is designed to make it possible for any



mechanic to test and recalibrate any type of automotive distributor, bringing it exactly to manufacturer's specifications. All working parts of the distributor can be tested, such as the vacuum advance, the contact spring tension, and the automatic advance.

4 Ways your Service Station can profit— with INLAND EMERGENCY MATERIALS



Looking for another profitable service to furnish your customers? You profit four ways when you use and sell Emergency Tire Repair Patches and Inland Green Top Tube Repair Materials—all smartly packaged for faster, easier sales!

A new folder gives size, price and product data. Ask your Inland salesman or automotive jobber. Or mail Coupon.

USE AND SELL INLAND

Get all the facts in this new free folder

Inland Rubber Corporation
33 South Clark St., Dept. M 41, Chicago 3, Illinois

Please send me new free folder on Inland Emergency Materials.

Name.....

Address.....

Town..... INLAND

Hein-Werner Jacks

The Hein-Werner Motor Parts Corporation of Waukesha, Wisconsin, is now delivering a complete line of hydraulic jacks for use to the automotive trade. The line includes bumper jacks, 9 floor jacks graduated in sizes up to 18 inches and two portable jacks.

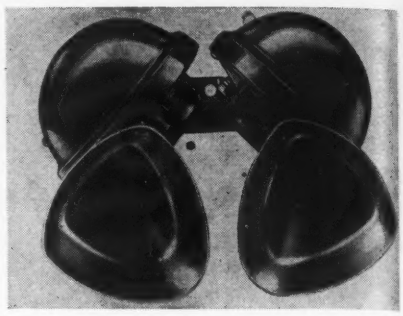
Ken-Glo Cleaner Waxer

New Ken-Glo liquid wax polisher both cleans and waxes in one operation made by the Ken-Nite Company, Detroit, Michigan, Ken-Glo is a weatherproof liquid cleaner and wax with a carnauba base that rubs to a hard, dry finish.

Sparton Horn

The new Sparton air-shell horn with twin die cast projectors is being produced by the Sparks-Withington Company, Jackson, Michigan.

A matched pair of horns made of die cast, long coiled, air column projectors, this unit is described by the manufacturer as having a powerful and effective signal suitable for both city and highway use. It



can be installed in three different positions and in either position requires the space of 6¾ in. high x 9½ in. wide x 6¾ in. deep. The price for the 6 volt unit is $9.35 and for the 12 volt, $11.00.

Chicago R & M Products

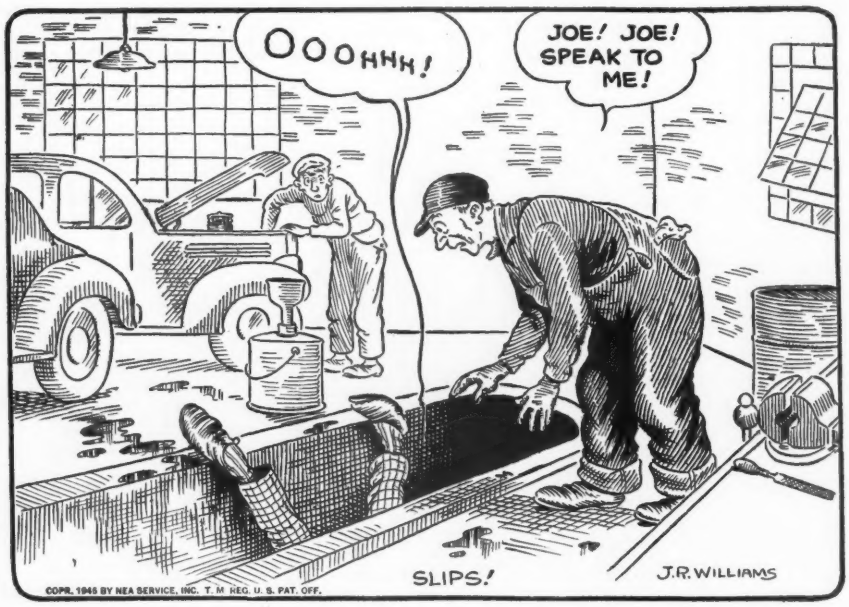
Chicago Rivet & Machine Co., 9600 W. Jackson Blvd., Bellwood, Ill., is featuring three units: Reliance Brake Reliner, the Buffalo Brake Reliner, the No. 13 and No. 130 Automatic machines and the No. 75 Driller.

The Reliance all-purpose brake reliner is designed to meet the need of the average repair shop or brake service station for a precision type relining machine at a moderate price. Combining five operations in one, this reliner delines, drills, countersinks rivets and grinds. A 7 in. throat accommodates a wide range of work and a suction fan draws all grinding dust into a collecting bag while a detachable rivet catcher prevents used rivets from falling to the floor.

New Lynch Models

The Lynch Manufacturing Company, Toledo 1, Ohio, has added several new models to its line of compressors. These include six single stage units, three horizontal, three vertical, and four two-stage vertical units. The entire Lynch line now consists of a total of 16 units ranging in size from ½ hp single stage units up to 5 hp 2-stage units.

OUT OUR WAY



Above is a portrait of a mechanic, deciding to take up some other business, when, as, and if he gets out of the hospital.

With SOL-SPEEDI-DRI, you can end the dirty, dangerous accumulations of oil and grease on the floors around your shop, garage, gas station, truck or bus terminals.

SOL-SPEEDI-DRI is easy to use and inexpensive. It cuts down accidents, falls, and the dangers of fast-spreading fire . . . it works while you work safely.

SOL-SPEEDI-DRI, white, dry and granular, is oil-thirsty, absorbs oil just as a blotter does ink. Spread a carpet of it, wherever oil and grease accumulate and you immediately have a white, non-skid surface. Sweep it up, and the floor will be clean, dry, and safe. No more mess, no more slipping, no more back-breaking floor-cleaning jobs.

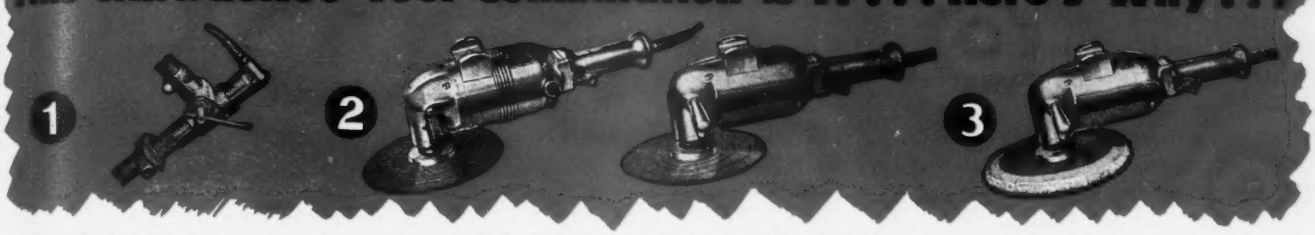
Write your name and address on the margin of this page for a Free Sample and complete details.

SUPPLIERS: *East*—Safety & Maintenance Co., Inc., No. 1 Wall St., New York 5, N. Y.
South, Midwest & West Coast—Waverly Petroleum Products Co., Drexel Bldg., Philadelphia 6, Pa.

SOL·SPEEDI·DRI
OIL AND GREASE ABSORBENT

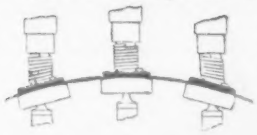
The "Extra-Profits-Formula" for Busy Shops

This Milwaukee Tool Combination is IT . . . Here's Why . . .



Milwaukee Pneumatic Body and Fender Reshapers

Here's the Fender Hammer with which you can completely reshape damaged sheet metal like new on any car — from turret top to fenders. It has 5 frames with wider throat openings — a fast acting valve — and speedy ratchet release which saves time on every job. That means more profits to you.



The exclusive Floating Head and Dolly are always parallel, working together. The hammer blows, therefore, strike at right angles to the metal surface. Cannot nick or needlessly stretch the metal.

Milwaukee 7" and 9" Sanders

Only MILWAUKEE Sanders give you extra power, higher grinding speed and a flexible Spring Steel Backing Pad. No other pad is as well balanced, flexible, or keeps as cool in use. No other pad permits using 9", 7", and 5" dia. discs. Gets more work from every abrasive disc.

Milwaukee 9" Polishers

The MILWAUKEE Polisher produces the lustre that satisfies customers and makes money for you. Ball bearings and proper speed turn out faster work. The weight is just right — no tiring pressure needed. In addition, the reinforced rubber and spring steel Backing Pad is "the tops" in flexibility.

Improved DRILLS • SANDERS • FENDER HAMMERS • GRINDERS • POLISHERS

Milwaukee

GUARANTEED TOOLS

Milwaukee Electric Tool Corp., Milwaukee 8, Wis.

Milwaukee Electric Tool Corp.
5330 West State Street
Milwaukee 8, Wisconsin

Send me your FREE catalog.

Name.....

Address.....Zone.....

City.....

State.....

Porter-Ferguson Body And Fender Repair Unit

The Porter-Ferguson 5-A Master unit is a portable body and fender repair unit. Features include: special clamp to hold panels, doors and hood; self-retracting power jacks for all positions; rocker action spoon assembly for working behind inner construction; and special clamp to hold panels, doors and hood. It incorporates a shop press capable of handling work up to 20,000 lbs. H. K. Porter, Inc., Boston 49, Mass.

Blue Crown Plug Cleaner

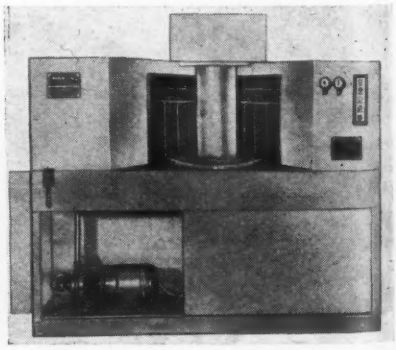
A compact spark plug cleaner is offered by Blue Crown Spark Plug Co. In operation, an air-chuck is applied, first, to sandblast the electrodes and the entire outer surface of the plug with a special cleaning compound. The plug is then "blown clean" to remove carbon deposits and leaded fuel accumulations.

The over-all height of the cleaner is 19 in. and the diameter 11½ in. Blue Crown Spark Plug Co., 1800 Winnemac Avenue, Chicago 40, Ill.

Mabor Washer

The Mabor Company, Clark Township, Rahway, N. J., has produced a turn-table type washer which both rinses and dries average sized parts in baskets, trays or individually.

Requiring but one operator to load and unload the parts for cleaning, this self-contained washer requires little floor space in which to handle an average of 60 baskets per hour. The washer is available in three standard sizes and may also be had with special modifications



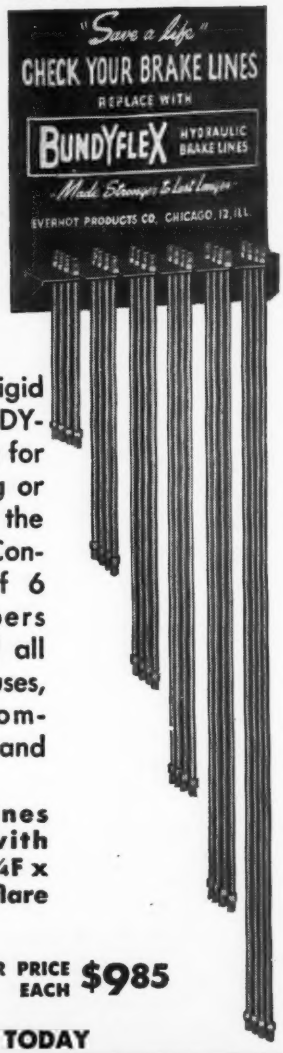
where centering of parts is essential. It may be heated by steam, gas, oil or electricity.

BUNDYFLEX RIGID METAL HYDRAULIC BRAKE LINES

Original Equipment on Every Car and Truck Made in the United States in Recent Years

ATTRACTIVE METAL SIGN AND RACK FREE WITH EACH ASSORTMENT

90% OF ALL REPLACEMENTS of Rigid Metal Brake Lines can be made from this NEW No. 475 FAST SELLING DEALERS DISPLAY ASSORTMENT



No more uncertainty and extra work on rigid brake line replacement jobs, thanks to BUNDY-FLEX ready-to-install lines. No more hunting for right tubing or fittings; no more tube cutting or flaring. It's easier and faster to duplicate the original installation from this assortment. Contains 4 each of 6 popular numbers that fit 90% of all cars, trucks, buses, tractors, etc. Complete with sign and rack.

Extra long lines easily made with EVERHOT 300C ¼F x ¼F inverted flare union.

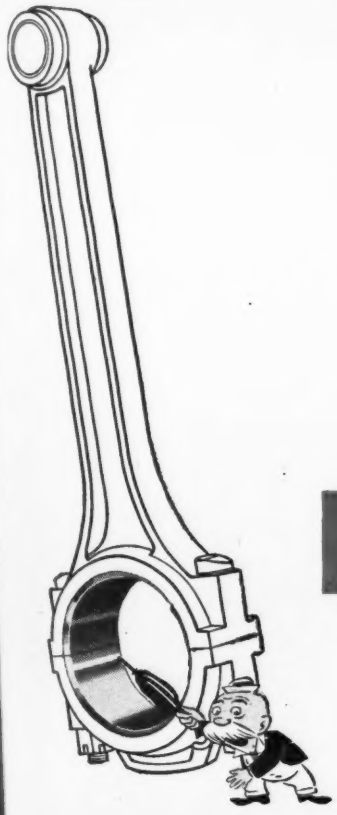
LIST PRICE EACH **$14.80** DEALER PRICE EACH **$9.85**

ORDER FROM YOUR JOBBER TODAY

EVERHOT PRODUCTS CO.
2055-59 W. CARROLL AVE., CHICAGO 12, ILLINOIS
1511 W. SEVENTH ST., LOS ANGELES 14, CALIFORNIA

Performance goes up in smoke...

when worn connecting rod bearings cause oil pumping



Every engine opened up to correct oil pumping should have new bearings installed. Worn bearings let excess oil burn to carbon on new piston rings, pistons, spark plugs, valves. New bearings protect you against comebacks on overhauls and cost little more at the time of overhaul. Federal-Mogul bearings are your best bet, because they are engineered for the job of oil control!

FEDERAL-MOGUL SERVICE
DIVISION OF FEDERAL-MOGUL CORPORATION
COLDWATER, MICHIGAN

Replace in Sets with Genuine

FEDERAL-MOGUL

Oil-Control Bearings

Tydol Sells Federal Tires

(*Continued from page* 72)

companies present. It provides that the oil company on the first of January will take over the exclusive sales of the entire line of passenger car, truck, industrial and agricultural tires and tubes made by the Federal Tires Division of U. S. Rubber Co., in all territories in which the three sales divisions of Tide Water Associated's national organization operate.

Individual divisions of Tide Water Associated have in the past sold tires of different makes, but this is the first time the entire company has united on the sale of the complete output of a single make of tire on a national basis.

Bonneville Salt Bed Activity in 1947

We are advised by the Salt Lake City Chamber of Commerce through their secretary, Gus Backman, that a heavy schedule of activity is being planned for the Bonneville Salt Beds next year. It is expected that another World Land Speed Record Attempt will be made by John Cobb of England. Undoubtedly Ab Jenkins will be trying to break some of his own as well as other existing speed records. Anyone who contemplates a record run or other activity on the salt should contact Mr. Backman as soon as possible so that a schedule may be arranged. It is being planned that all such activity will be between Aug. 15 and Sept. 15.

Fullerton Promoted By Allen Electric

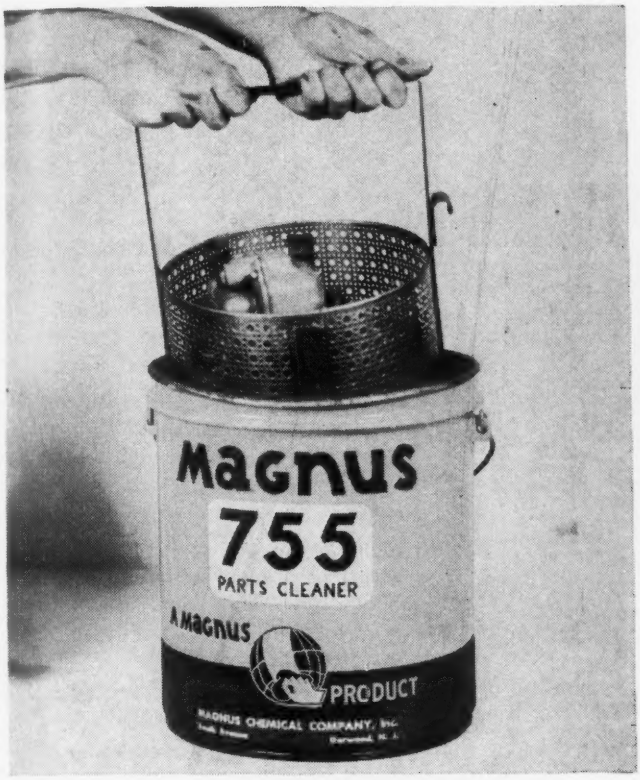
Kent Fullerton who has represented Allen Electric and Equipment Co. in the Michigan and Northern Indiana territory for the past 14 years, and during the war period handled their sub-contract business, has been appointed sales and advertising manager of the company.

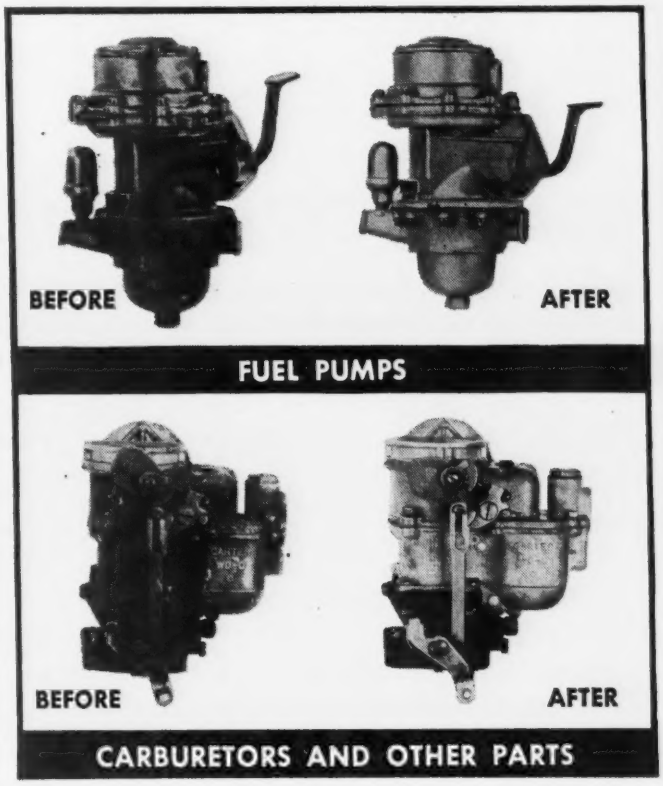
The company's sales force will be expanded considerably, as will also their advertising, and during 1947 their tune-up school program, which was so successful for several years previous to the war, will be reinaugurated.

"I'd never be able to get my feet up to the steering wheel to shift the gears."

LOOK AT THE CLEANING JOB You Can Do

WITH THIS FAST WORKING PARTS CLEANING OUTFIT!





WITH this simple, economical parts cleaning outfit you can clean all kinds of parts faster and better than you've ever been able to before.

SOAK 'EM CLEAN!—Magnus 755, the emulsion solvent cleaner developed for the Army Air Forces during the war, speedily penetrates carbonized, gummy, sticky dirt deposits on carburetors, fuel pumps, pistons, rocker arms. Most deposits are softened, loosened and removed in less than 15 minutes of soaking. Only on piston heads will it be found necessary to use hand brushing or scraping for removing the softened deposit.

FAST—There is no faster cleaner for these stubborn dirts. It is fast because of its unique combination of solvent and emulsifying action on the particularly adhesive deposits of carburetors, pumps, etc.

THOROUGH—Magnus 755 is in wide use for cleaning automotive parts in large volume, using cleaning machines or heated tanks. It also does a thorough, highly satisfactory cleaning job when used at room temperature in the Magnus Parts Dipping Outfit.

ECONOMICAL—You can use your Magnus 755 solution over and over again. It sludges up very slowly because most of the dirt is removed by rinsing *after* the soak. And when the container does become sludged, you can pour off the 755, clean out the sludge and put the solution back for further use.

SAFE—Magnus 755 is safe for cleaning *any* metal or combination of metals. It will not attack aluminum alloys, babbits, cadmium, solder, die cast or other soft metals. With the water seal, all fire hazard is eliminated. The solution is an excellent paint stripper, removing coatings of paint, enamel and lacquer down to the bare metal.

PAYS FOR ITSELF IN NO TIME!

This complete Magnus Parts Dipping Outfit—five-gallon container, cover, dipping basket and the charge of Magnus 755—costs so little that it should be completely paid for by time and labor savings in a few weeks. Write for prices and complete details.

Magnus Automotive Cleaners & Machines

MAGNUS CHEMICAL COMPANY • 174 South Avenue, Garwood, N. J.

Service Representatives in Principal Cities

IN CANADA—MAGNUS CHEMICALS, LTD., 4040 RUE MASSON, MONTREAL 36, QUE.

Kaiser-Frazer Pact

(*Continued from page* 73)

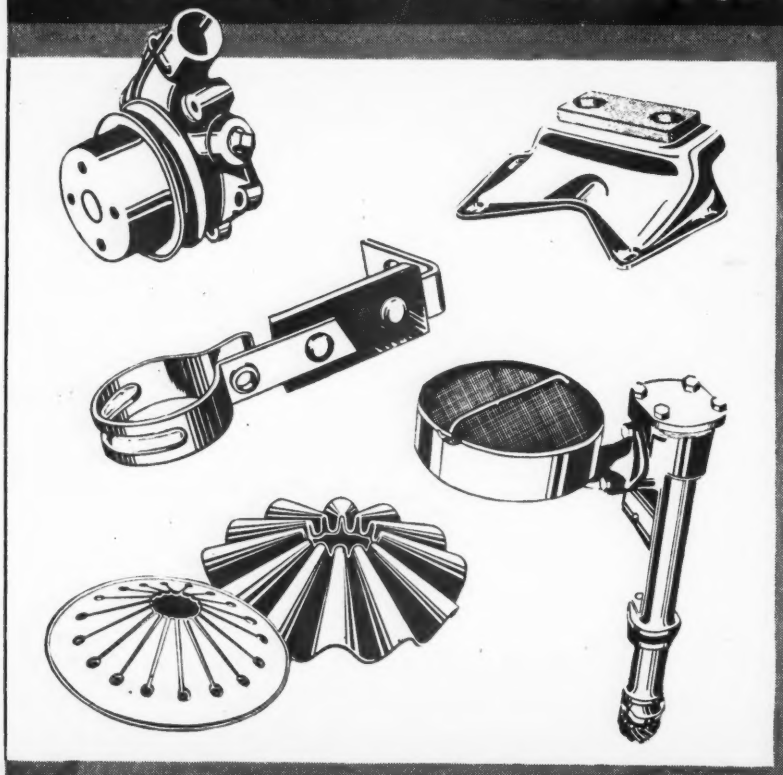
must have established a 90 per cent "presenteeism" for the time he was scheduled to work, and he must have been on the payroll at least 90 days prior to Dec. 1.

Only 63 employes, two per cent of the total eligible, were disqualified for absenteeism.

The amount that each employe received was determined by dividing the Security Trust Fund by the total number of hours worked by qualifying employes. Each eligible employe received an amount equal to the hourly figure multiplied by the actual number of hours he worked.

At the Nov. 30 "deadline," output of Kaiser Special and Frazer cars at Willow Run had passed the 300-a-day mark. Management was confident it would distribute a much larger Security Trust Fund next year.

ENGINEERED · · IDENTIFIED



Constantly at work improving and increasing the line of HARD-TO-GET items is the policy of WOHLERT Corporation—All parts are attractively packaged and plainly Identified. Ask for WOHLERT ENGINEERED parts and you'll get the best.

Wohlert CORPORATION
LANSING 5, MICHIGAN U.S.A.

Keller Named President Of Bobbi Motor Car

Announcement was made this week by J. D. Carter, Chairman of the Board of Directors of Bobbi Motor Car Corporation, of the appointment of George D. Keller, as President of this new motor car manufacturing concern with general headquarters at Birmingham, Alabama.

Mr. Keller spent twenty-eight years with the Studebaker Corporation, the last five years of which was in the capacity of Vice President.

At the same time Robert T. Haney was elected Director and Vice President in Charge of Sales. Before joining Bobbi-Kar, Mr. Haney was head of the Haney Motor Company, Inc., and the Haney Corporation of Philadelphia and Colorado Springs, Colorado—manufacturers and distributors of household appliances and hydraulic lift products. Mr. Haney's business career has been largely devoted to sales and advertising, from which he gained a well rounded experience in the automotive and appliance fields.

Record Production In Tire Industry

Passenger car tire production during the first 10 months of 1946 exceeded total annual production for any year in the past decade.

This measure of the industry's reconversion effort was reflected in a recent report of The Rubber Manufacturers Association that manufacturers had built more than 53 million tires through Oct. 31. Highest previous annual output was chalked up in 1940 when the industry produced 50,956,000 units.

October's all-time high monthly production sent the year's output soaring past all previous records. For that month, production reached 6,666,470 units in passenger car sizes. At the same time, the industry went into its still abnormally low inventories to actually ship more tires than it produced. October shipments totaled 6,917,300 units—5,474,354 to motorists for replacement, 1,393,954 to motor vehicle manufacturers as original equipment, and 48,992 to export.

No Spark Plug Is Stronger Than Its Insulator
You can depend on
FRENCHTOWN
INSULATORS
—used by more spark plug manufacturers than any other make
FRENCHTOWN PORCELAIN CO.
Sales Office
8 Muirhead Ave.
Trenton 9, N. J.
Factory
Frenchtown, N. J.

Union of South Africa Heads Overseas Market For U. S. Automobiles

The best overseas market for American automobiles under existing import license and dollar exchange restrictions is the Union of South Africa, Harry D. Dodge, president of Kaiser-Frazer Export Corp. and Graham-Paige International Corp., declared recently.

Mr. Dodge, for 30 years a leading figure in foreign automotive sales, described other leading overseas markets, in order of their current sales potentialities, as Argentina, Sweden, Portugal and Switzerland.

"Although they are making rapid recoveries, it will be many months before most of the war-ravaged countries of Europe are able to conduct normal import-export business operations," Mr. Dodge, who recently returned from his second tour of European sales areas since January, said.

Settlement of internal economic and political problems which beset virtually all European countries would provide the greatest volume of trade between the U. S. and Europe that the world has ever seen, Mr. Dodge said. The tremendous European demand for American automobiles and other products is comparable to that in the U. S., he declared.

PRESTO

TRADE MARK

the danger's gone!

MIRACLE FIRE FIGHTER THAT BRINGS BIG PROFITS

COMPACT! NEW! POWERFUL!

A fire-extinguisher that's a necessity for every car owner. Nothing will put out fires faster. Comes complete with bracket for mounting in car, or fits in any glove compartment. Retains its full power for years. Can be used and re-used without refilling. An ideal fast-selling item that brings big profits to you. Write for sample at special trade discount today. Free brochure sent on request. IMMEDIATE DELIVERY.

ACTUAL SIZE

QUICK SALES FOR YOU....

because it is as effective as larger extinguishers.

because it is always ready for instant action.

because it is simple and easy to use.

because it is designed to sell at a price that brings you a quick turnover.

because it helps start cars stalled by dampness.

because it is an ideal new car accessory.

MERLITE INDUSTRIES, INC. 319 Pearl St., New York, N.Y.

Hook Locking Device

A simple self-locking device that may be adapted to hooks used in industries has been announced by W. H. Foster of 4622 Kingswell Ave., Los Angeles.

This self-locking hook has a fulcrumed latch member, or finger, that closes the opening into the hook, and is retained in this closed position, so that it cannot be accidentally swung inward as result of the latching finger being struck on the outside. For swinging the latching finger into open position, a manually operated spring-held member is manipulated. A portion of this manually-operable member engages a part of the latching finger at a point a substantial distance away from its fulcrum, so as to effectively maintain the latching finger in position to close and lock the hook.

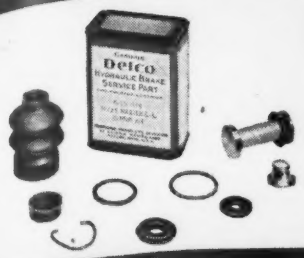
CD-Sno Fog

The General Detroit Corp. and The General Pacific Corp. present a carbon dioxide portable fire extinguisher in a range of sizes from 2 to 100 lbs. Called CD-Sno Fog, the extinguisher is one of a complete line of Underwriters' approved fire extinguishers and allied products.

CD-Sno Fog was developed primarily for fighting fires in electrical equipment, oil, grease, and flammable liquids. Since the carbon dioxide is a non-conductor, it is said to be safe to use on electrical fires even while the current is on. The manufacturer claims that it leaves no stain on clothing, equipment, or premises, and is harmless even when used around food.

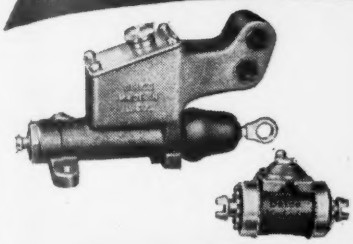
CD-Sno Fog is made in 2, 4, 7½, 10, 15, 20, 50, 75, and 100 lb. sizes. The General Detroit Corp., 2270 East Jefferson Avenue, Detroit 7, Mich., or The General Pacific Corp., 1800 South Hooper Street, Los Angeles 21, Calif.

3 "MUSTS" FOR MODERN BRAKE SERVICE



DELCO BRAKE REPAIR KITS

All essential replacement parts for master and wheel cylinders. Sealed, metal-topped containers are tamper-proof, easy to store and use—guarantee genuine Delco original-equipment parts.



DELCO MASTER AND WHEEL CYLINDERS

Right off the original-equipment production lines and sent to you in factory-sealed cartons for complete replacement jobs. Delco cylinders are used on more cars than is any other kind.

DELCO SUPER 9 BRAKE FLUID

Safe and efficient from 50° below to 300° above zero. Insure the success of any repair job by flushing with Declene flushing fluid and refilling with Delco Super 9.

UNITED SERVICE MOTORS

A UNITED MOTORS LINE

Delco brake replacement parts, Declene and Delco Super 9 are distributed nationally by United Motors Service distributors.

Yes, you need all three to make your brake service really complete and profitable. And you can always use Delco parts and fluid with confidence in their consistent high quality. Their performance in your customers' cars makes friends and new customers for you!

Delco
SUPER 9 BRAKE FLUID
DECLENE • BRAKE PARTS

MORAINE PRODUCTS
DIVISION OF
GENERAL MOTORS

STANDARD FOR EQUIPMENT • *THE* STANDARD FOR REPLACEMENT

Ford Distributes Lube And Maintenance Charts

Lubrication and maintenance wall charts, one for Ford passenger cars and one for Ford trucks, have been distributed by the Ford Motor Company to Ford dealers, independent garages and fleet owners, according to I. L. Pierce, director of parts and service for the company.

The charts are in color and measure 24 inches by 36 inches. Each type of lubricant is represented by an individual color to save time, eliminate guesswork and to cover all points thoroughly. The 1000 and 5000-mile lubrications are indicated in sepaarte sections as a guide to present personnel and to facilitate the training of new employes.

"The physical set-up of a lubrication department and its general neatness and cleanliness are potent factors in establishing customer confidence," Mr. Pierce explained.

"The lubrication and maintenance charts prominently displayed will aid in maintaining an attractive lubrication department.

"They show customers that dealers are prepared to do a first-class lubrication job, and by referring to the charts and following instructions, Ford equipment will be served with proper lubricants that are essential to good performance and long life."

sells on sight!

THREE COLOR DISPLAY CARTON

clip this coupon for FREE sample!

CENTRAL EQUIPMENT CO., 902 S. Wabash Ave., Chicago 5, Ill.
We should like to have a FREE sample of your new, powerful, mechanically perfect hose clamp with the push plus pull action . . . also Bulletin No. 0447 that tells all about it.

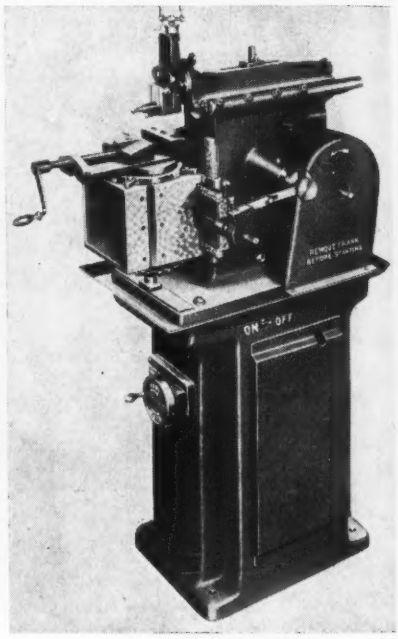
NAME OF COMPANY

ADDRESS

CENTRAL EQUIPMENT CO.
902 S. WABASH AVENUE
CHICAGO 5, ILL.

Logan Shaper

Production of a 7-inch Shaper is announced by Logan Engineering Company, 4901 West Lawrence Avenue, Chicago 30, Ill. A companion item to the Logan Lathe, the new Shaper is designed to handle a wide variety of work, including

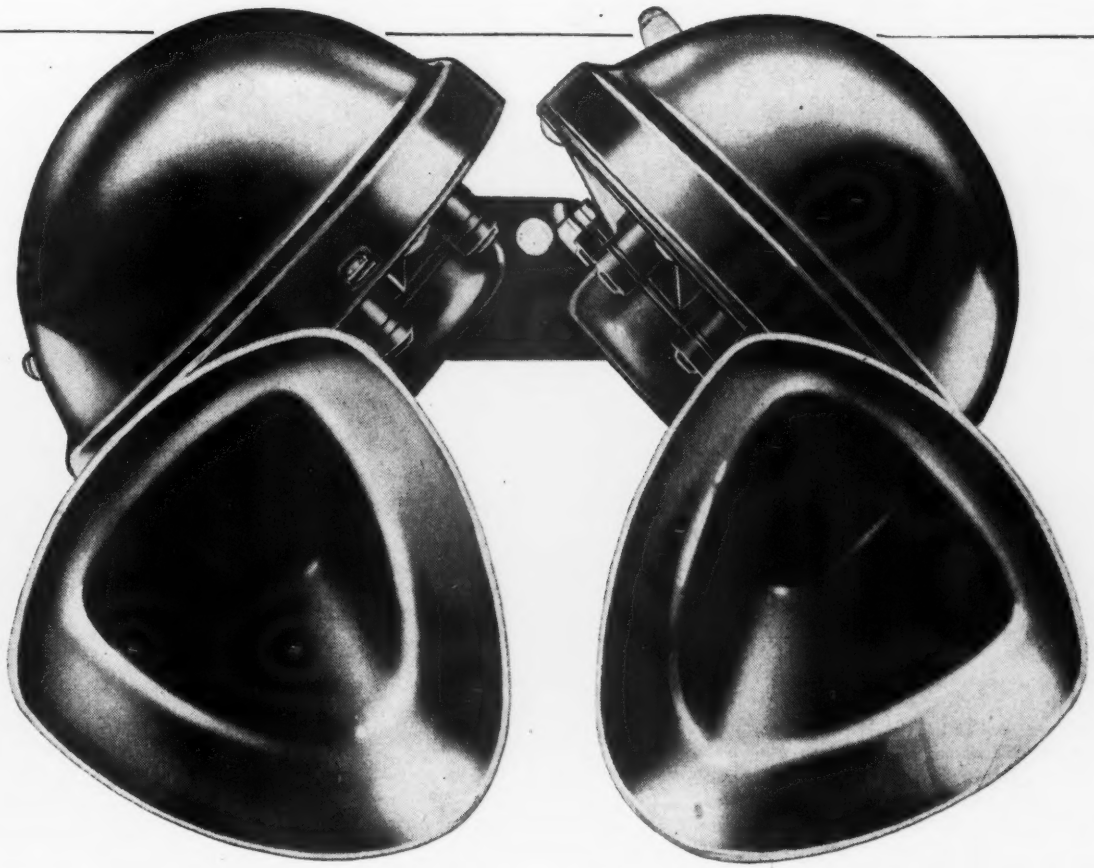


straight cuts, angular cuts, squaring, machining and slotting operations. It has a maximum stroke of 7⅝ in. and any desired operating speed between 64 and 175 strokes per minute is available.

The maker states that the speed can be changed instantly, without stopping the motor or shifting the belt. The ram is micro-set by a screw adjustment. There are six automatic feeds in either direction from .002 to .012, with a half turn of the feed handle reversing the feed. The tool head may be swiveled and re-set to center by means of tapered locating pins.

Sparton presents:

A commanding new voice!



The new J-34 Sparton Horn

You'll be hearing from this outstanding new Sparton Warning Signal! The assembly consists of two matched horns which produce a definitely commanding signal—pleasing and courteous.

This is *the most compact dual horn on the market* assembled on a single bracket. It can be mounted in any of three positions under the hood, where space is limited, or may be installed between the radiator and the front grille of most cars and trucks—very easy to install!

Construction of the J-34 is sturdy—with die-cast body—truly an aristocratic warning signal. Available in 6 and 12-volts, for all automotive and marine uses.

THE SPARKS-WITHINGTON COMPANY

Automotive Division • Jackson, Michigan

SPARTON - THE HORN HEARD ROUND THE WORLD

Hollingshead Holds Sales Conference

More than 75 national division, district and field managers of R. M. Hollingshead Corporation met recently for their first nation-wide postwar sales conference at company headquarters in Camden, N. J. The conferences and discussions of postwar problems continued over a week.

Lawrence M. Olson, vice-president, struck the keynote for the meetings with the prediction that "American industry and labor face an era of unprecedented prosperity which can construct a long-lasting, solid economic structure, if all phases of industrial, mercantile and production life adopt a long-range program, instead of following a haphazard one."

Representatives of the management of Hollingshead Corporation, manufacturer of automotive and aviation chemicals and lubricants, pledged the organization to "hold the price and quality line" in the postwar period.

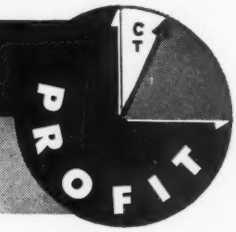
K-F Bonus Payment

When the $5 per car bonus plan was announced by Kaiser-Frazer Corp., it was expected that employes would collect about $1.5 million a year, based on production of 300,000 cars annually. The first year, however, the amount in the pool amounted to only $55,036 to be divided among 2783 eligible employes who had been on the payroll 90 days preceding Dec. 1 and who had not been absent more than 10 per cent of the working time. Largest check was for $41.82, with the average running $19.78. The small payment the first year was the result of production troubles which held output to 7515 cars during the period up to Dec. 1. A payment of $1.25 per unit on 13,969 Rototillers also was included in the bonus. At the time the plan was announced union officials hailed it as the bright spot in the industry. Original projections estimated that it would raise the yearly income of K-F workers about 30 per cent above the industry average. Individual payments were computed by dividing the total number of man hours worked by the amount in the fund and applying the factor to the number of hours each eligible employe worked. Only 63 employes were disqualified for being absent without good cause more than 10 per cent of the working time.

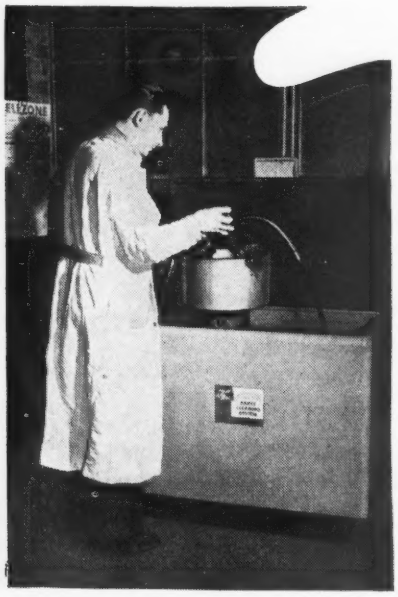
Cash Discounts Given By Most Manufacturers

Motor and Equipment Manufacturers Association recently made a study of manufacturers' cash discounts. Of 173 manufacturers polled 138 declared that their present terms are 2% by the tenth of the following month. Five manufacturers stated 2% by the tenth of the month, or net by the 25th. The remaining small minority varied in several ways. Of the 173 concerns polled, 88 sold Parts, 48 Accessories, 34 Equipment, 27 Tools, 27 Chemicals. There is of course some duplication in the last set of figures because some manufacturers sell more than one line.

LESS CLEANING TIME
MORE PROFIT TIME



WITH THE GRAY-MILLS AGITOR PARTS CLEANING SYSTEMS

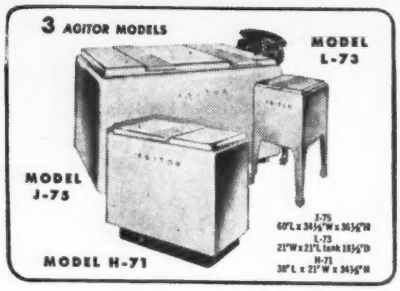


Users tell us . . .

"The AGITOR is a very good time saver and it does a very good job. I like the motor driven pump the best."

"The AGITOR H-71 is A-1! I do not know how we would get along without it. It will pay for itself in short time."

"An excellent machine, a great time and labor saver . . . We use the air agitation mostly."



AGITOR-cleaning means better inspection and more replacement sales. No heating or fire problems . . uses AGITENE or any cold solvent. Improved shop appearance, more working space, and reduced cleaning time are other advantages. Get your share of this *extra profit*—install a Gray-Mills AGITOR in *your* shop.

Write for FREE catalog that gives complete details on all AGITOR models and the 4-Way Cleaning Action.

GRAY-MILLS CORPORATION
1943 RIDGE AVENUE, EVANSTON, ILLINOIS

IT'S A "WALK-IN" SHOWCASE!

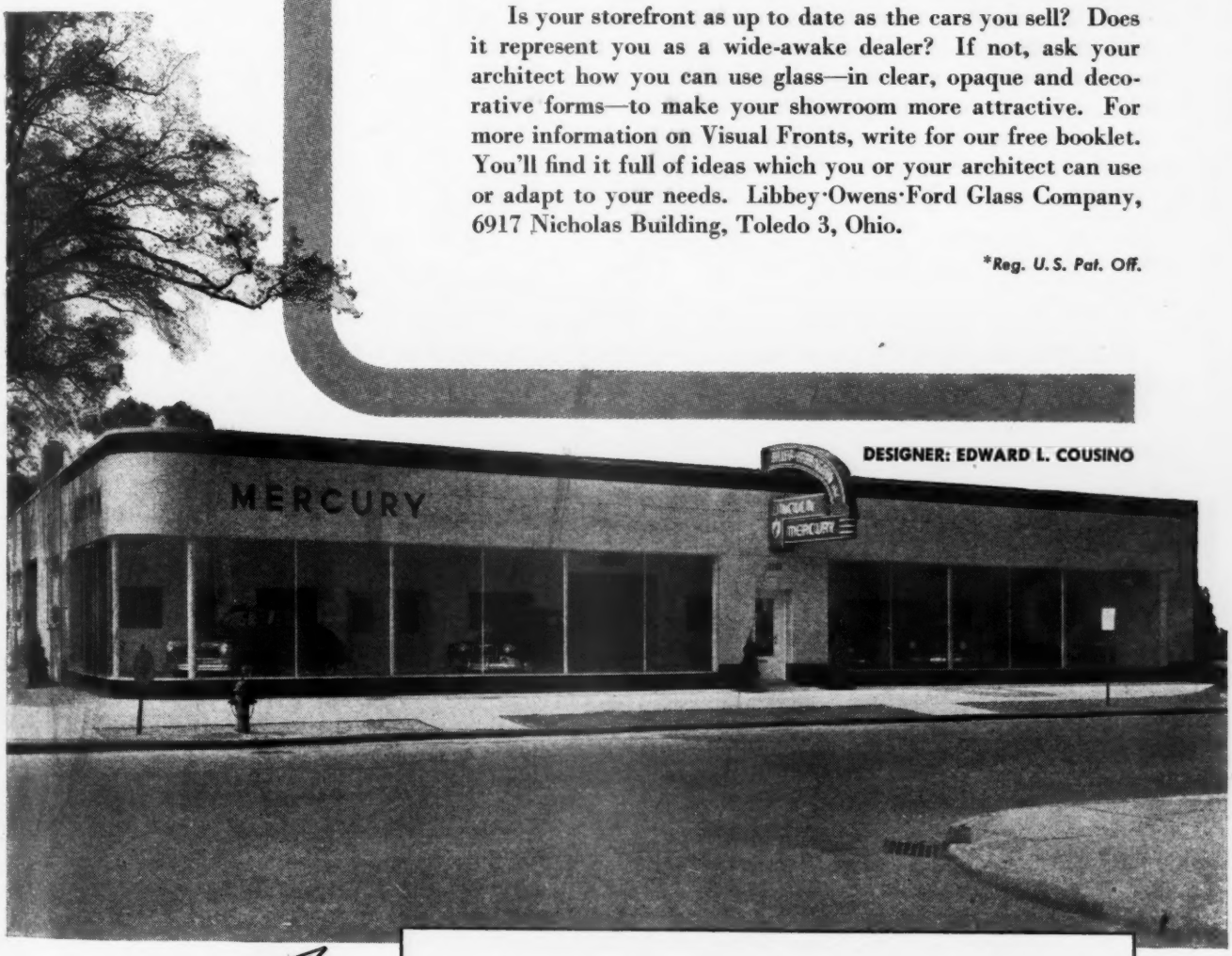
What an invitation to come in! Shiny new cars—in a modern neat showroom that's designed for easy seeing.

The Visual Front makes the most of display possibilities. Simple in design—it attracts attention to the display, rather than to itself.

This auto showcase is framed in a soft shade of *Vitrolite** glass facing. *Vitrolite* gives color and luster to the front, without creating bizarre effects. Note how the low bulkhead permits an unrestricted view of the cars on display. Curved plate glass suggests turning the corner to see the cars from another angle. Beauty, simplicity and practicality are combined in this modern front.

Is your storefront as up to date as the cars you sell? Does it represent you as a wide-awake dealer? If not, ask your architect how you can use glass—in clear, opaque and decorative forms—to make your showroom more attractive. For more information on Visual Fronts, write for our free booklet. You'll find it full of ideas which you or your architect can use or adapt to your needs. Libbey·Owens·Ford Glass Company, 6917 Nicholas Building, Toledo 3, Ohio.

*Reg. U. S. Pat. Off.



DESIGNER: EDWARD L. COUSINO

VISUAL FRONT

©1943 Libbey-Owens-Ford Glass Company

LIBBEY·OWENS·FORD

a Great Name in **GLASS**

Packard Program Based On Heartening Optimism

Despite production troubles and financial losses during the past year, Packard Motor Car Company has registered its optimism in the future of the automotive industry by announcing a $20 million rehabilitation and expansion program, the largest in the company's 47-year history. Included in the program are tools, dies and engineering for the next new models and diversified products, including aircraft and marine engines, taxicabs and chassis for hearses and ambulances. Engineering has been completed on a line of trucks, according to George T. Christopher, Packard president, but production has not begun because of the material shortage. Introduction of the new passenger car models will be delayed well into 1947, he said, because of inventory commitments on present models and the delay which would be necessary to make the switch. Tooling has been completed, however.

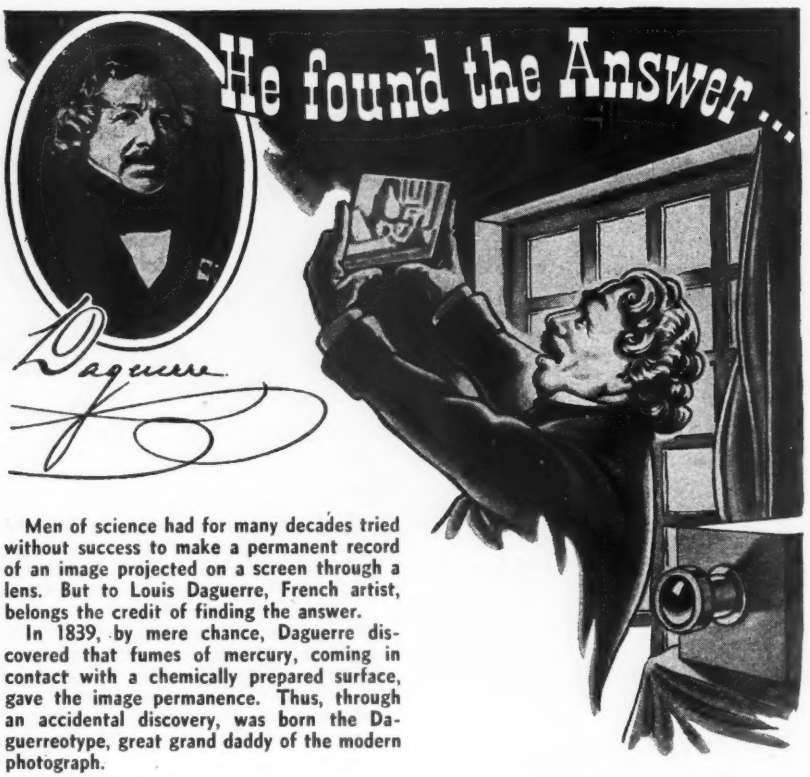
Mr. Christopher said that lifting of controls will stimulate production of steel, which has been at a price disadvantage, and that in view of the better outlook his company will draw on its inventory of steel to step up production. He estimated that by next March, Packard will be producing 30 per cent more cars than at present. Output in October was 6728 cars, slightly above the break even point for Packard. Ultimate capacity of the plant, when two shifts are employed, will be about 13,000 cars a month, he said. He also predicted that by this time next year, the industry will be selling cars instead of merely taking orders, but that it would not necessarily mean a drop in production.

The Packard president did not comment extensively on the contemplated truck line, but said that it would encompass models of up to 1½-ton capacity. Neither did he give any clue about the forthcoming new models, other than to say that Packard, like all other companies, has been working on an automatic transmission and that it hopes to have one in production sometime next year.

Goodrich Stocklite

The improved Stocklite, manufactured by the Goodrich Electric Company, 4600 Belle Plaine Avenue, Chicago 41, Ill., is designed for the purpose of illuminating shelves and bins in narrow stock room aisles.

It is designed to provide 8 different reflecting surfaces to insure distribution of light where it is most needed, to build up intensities on shelves from top to bottom and in bin interiors. Curved V-shaped reflectors at either end eliminate glare in the aisles by shielding the light source from the field of vision in addition to reflecting light into the bin interiors. Lamps are not directly visible as one looks down the aisle. With proper spacing of units, light patterns overlap to provide uniform illumination the entire length of the aisle so that workers can comfortably read small parts numbers, typewritten slips, and so forth.



Men of science had for many decades tried without success to make a permanent record of an image projected on a screen through a lens. But to Louis Daguerre, French artist, belongs the credit of finding the answer.

In 1839, by mere chance, Daguerre discovered that fumes of mercury, coming in contact with a chemically prepared surface, gave the image permanence. Thus, through an accidental discovery, was born the Daguerreotype, great grand daddy of the modern photograph.

The answer to your FUEL PUMP and CARBURETOR problems is no "accident" when you make repairs with Hygrade Replacement Parts in—

CONTAIN-ALL KITS

Skillfully engineered for old units, these "precision" parts insure a reconditioning job without comebacks—plus pleasant music by your cash register.

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by **HYGRADE**
ENGINEERED FOR OLD UNITS
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MAKE 1947 A BETTER YEAR IN PRODUCTION OR MAINTENANCE

"YOU can't do a good job without good tools" . . . since 1897 we've been supplying the *best electrical tools for all industry* . . . and now as our fiftieth year dawns, thousands of plants, large and small, testify to the soundness of that statement. So . . . make sure your electrical tools are right, up-to-date . . . ample and efficient.

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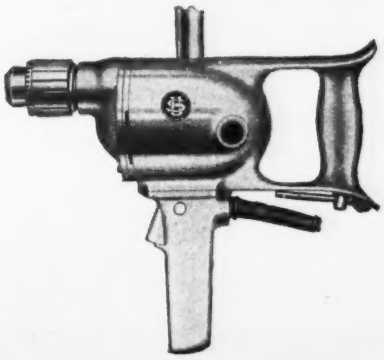
½" COMMANDER DRILL

Model 1C02

New model 1C02 for "all purpose" drilling — another "first" in the drill field. Compact design, light weight, perfect balance, slow spindle speed and other features. Net weight, 8 lbs.



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CINCINNATI, OHIO

These New Items SAVE ✓Time ✓Work ✓Money

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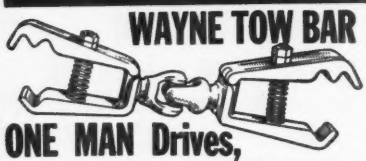

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- Attaches to any bumper, center or off center, including knee-action models.
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- Steering wheel of towed car remains unlocked and unattended. Ideal for 4-wheel trailers.
- Slickest thing you ever saw! Your money back if not satisfied.

ORDER DIRECT . . . ONLY $17.45 F.O.B. Factory Retails at $25.95

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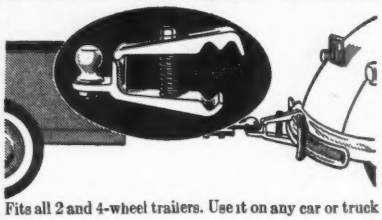

Fits all 2 and 4-wheel trailers. Use it on any car or truck bumper, or tractor. Can be used with or without ball joint. Just unscrew ball joint and use pin or bolt. All steel, guaranteed. If bent or broken, we will replace Free.

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MANY USES IN GARAGES . . . HOMES . . . SERVICE STATIONS

Move your tools without lifting them! Makes handy seat or parts rest. All-steel electric - welded utility drawer. Strong . . . withstands 1,000 pounds. Size 10"x12"x11" high.

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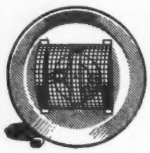
CAMPBELL'S GARAGE CAR HEATER



For easy winter starting. Save cars' battery and motor. Plug in any light socket. Place under hood.

Automatic heat control, adjustable. 6 ft. cord. Fast seller now!

ORDER DIRECT . . . ONLY $5.95 F.O.B. Factory Retails at $8.95

WAYNE HUB CAP REMOVER

SAVES TIME!

One flip of handle and hub cap is off! Prevents battering hub caps and chipping wheel paint. Heavy steel, rust proofed. Retails at $1.25. GUARANTEED.

Lots of six — $4.50, F.O.B. Factory

SEND IN YOUR ORDER TODAY

H. D. CAMPBELL CO.

357 6th St., Rochelle, Illinois

Increased Freight Rates Raises Automotive Prices

The most obvious and easily computed effect of the increased freight rates, ranging from 17 to 25 per cent, is on the delivered price of the vehicle. Ford estimates that the added transportation charge will increase the price of Ford, Lincoln and Mercury cars by $1.78 at close-to-factory locations to as high as $23.79 on the West Coast. However, the factory list price is to remain unchanged, which indicates that the manufacturers will absorb at least for the present, the added cost imposed on higher freight rates on parts and materials used in manufacture. How much this will raise costs percentage wise is very difficult to compute, and no company was willing to make an estimate. However, it is an element of increased expense added to others of recent origin and will reduce the profit margin to some extent. An interesting fact is that about half the finished automobiles are shipped by rail. The manufacturers started working before the war to bring the percentage to about 70 per cent, but were unable to reach that figure because of the freight car shortage. Back in the twenties, about 200,000 cars were available for automobile shipment, whereas today there are approximately 30,000 of the auto-loader type car available, with about 10,000 on order. However, the smaller number now in use are handled many times more efficiently, and under present traffic procedure the cars are returned in about 15 days for a new load of automobiles.

Hayward Hallett In The East

The Hayward Hallett Equipment Company, of Los Angeles, Western manufacturer of semi- and full hydraulic automotive and truck lifts, have widened their market to include the East. Their main sales efforts will be concentrated on developing sales to the service station, car dealer and the garage fields.

Hayward Hallett state that they are now in a position to make immediate delivery of their new postwar hoists.

Study THE 1947 COLE-HERSEE ADS IN THESE PUBLICATIONS

Learn HOW YOUR PROFITS CAN SHOOT UP!

Quality ELECTRICAL AUTOMOTIVE EQUIPMENT

COLE-HERSEE CO.

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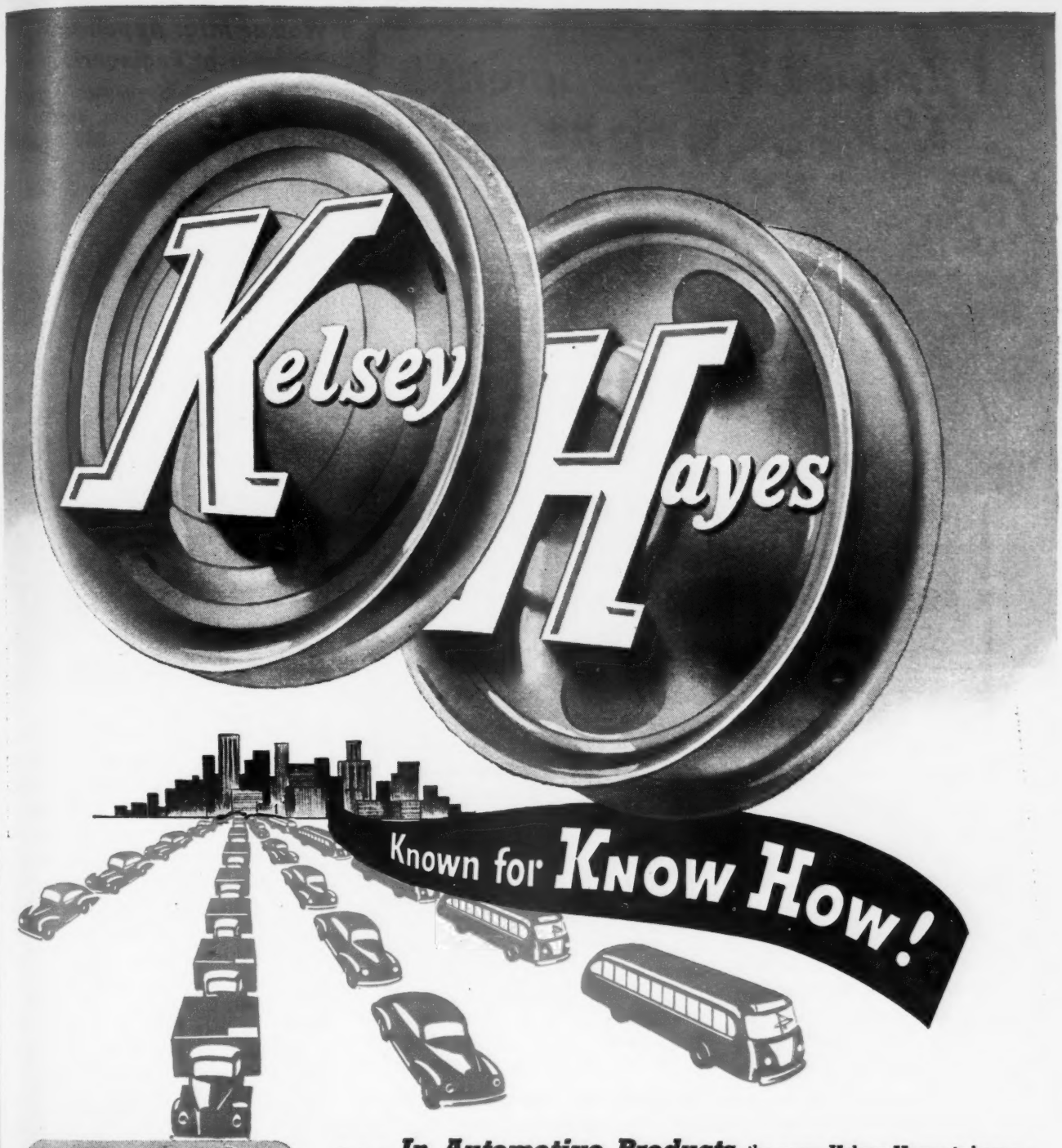


. . . *In Automotive Products* the name Kelsey-Hayes is known throughout the world for superior quality and performance. From the beginning of the automotive industry, Kelsey-Hayes has led in design development, and scientific production improvement of wheels, brakes, drums, hubs, chassis parts, and a variety of stampings and "run of foundry" items for passenger cars, trucks, tractors and buses. Kelsey-Hayes, largest in the field, with 5 plants in America and Canada, has A PRODUCTION KNOW-HOW SECOND TO NONE! For example,

. . . VACDRAULIC, a Kelsey-Hayes precision product, is becoming the choice of more and more manufacturers of cars, trucks and buses as standard equipment for safely boosting the hydraulic braking system. **VACDRAULIC** is a superior, sealed unit, with all moving parts inside . . . **VACDRAULIC** is easier to mount . . . connects only to hydraulic line and engine intake manifold . . . multiplies brake power many times, yet gives driver perfect feather-touch pedal control with proper "brake-feel" at all times. (Manufacturers: inquiries being accepted at Kelsey-Hayes . . . Automotive Distributors: please contact Empire Electric Brake Co., Newark 7, N. J.)

KELSEY-HAYES WHEEL CO. DETROIT 32, MICHIGAN

Know How

Immediate Shipment!

"PERFECT" PARTS WATER PUMP HOSE

ASSORTMENT NO. PK-2

Contains 12 pieces of 1-inch By-Pass Water Pump Hose, cut to fit all

CHRYSLER, DE SOTO, DODGE AND PLYMOUTH CARS, 1933-46

Packed in attractive carton, as illustrated
List Price $1.25

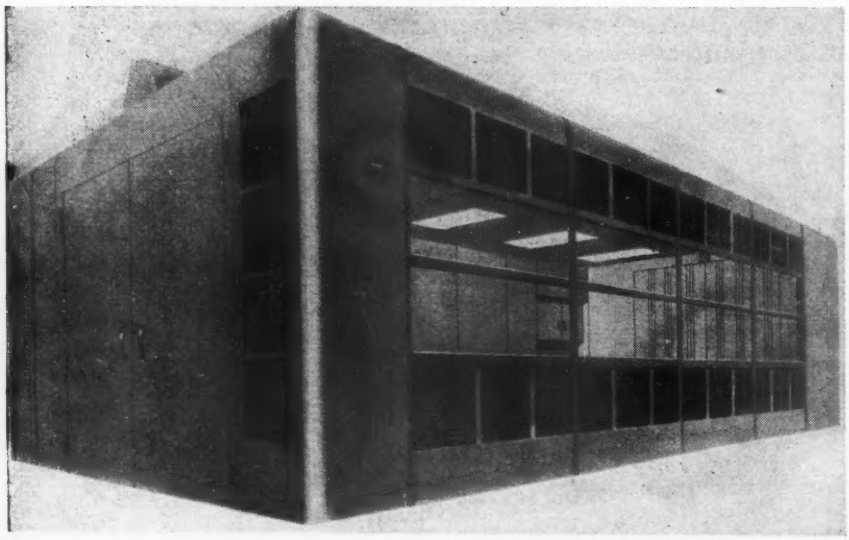
In bulk, 100 to Carton
List Price 10¢ each.

Write for Catalog of Complete Line

PERFECT PARTS, INC.
55 Amsterdam Avenue New York 23, N. Y.

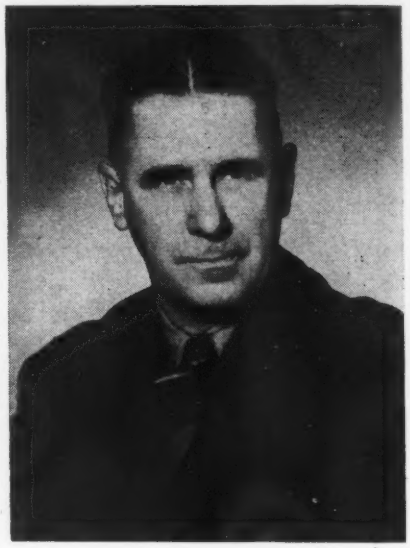
DeVilbiss Paint Booth

The DeVilbiss Company of Toledo 1, Ohio, has developed a complete paint shop in one package. Available in three sizes, these spray booths are complete in all particulars, including fluorescent lights, filter type doors, exhaust outlet connections and windows whereby the customer may watch refinishing operations while in progress. Equipment includes exhaust fan, complete spray equipment such as guns, connectors, valves, etc., and an air compressor. The sizes available are 12 ft. by 24 ft. x 9 ft., 14 ft. x 28 ft. x 9 ft., and 16 ft. x 33 ft. x 16 ft.



Walker Mfg. Appoints Director of Engineering

As part of the company's postwar expansion program, James S. Allan, president of Walker Manufacturing Company of Racine, Wis., announced recently the appointment of N. S. Prime to the position of Director of Engineering. Mr. Prime, who recently retired from the Navy with the rank of Captain after 20 years service, will represent management in the direction of the company's engineering program on its complete line of exhaust systems, jacks, lifts and other automotive accessories. Working with Prime will be Gunnar Jensen, Chief Engineer of the Walker plant in Racine, and Walter H. Power, Chief Engineer of the company's Jackson, Mich., plant.



Captain Prime attended Columbia University and Annapolis from which he graduated in 1926; received a Master's degree from the University of Michigan in 1936.

Also announced was the appointment of Martin Spencer as assistant to C. S. McCann, Director of Research. Spencer joined the Walker organization last spring after three and a half years at the U. S. Naval Engineering Experiment Station at Annapolis, Md., where he was responsible for research on diesel engines, smoke generation, lubricating oils and oil filtration. Spencer is a chemical engineer and graduate of Virginia Polytech Institute.

Announcing

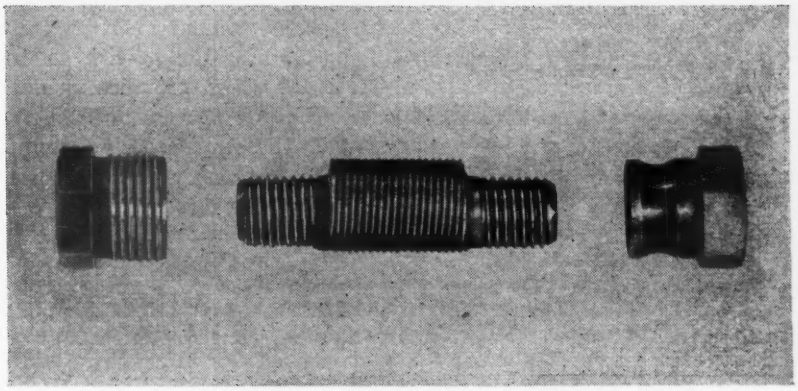
A new line of

HEAT-TREATED • FACTORY INSPECTED • LABORATORY TESTED

FRONT END SUSPENSION PARTS

by

GEARY



The first of this series, NOW AVAILABLE, is the G-10 Upper Support Assembly, shown here.

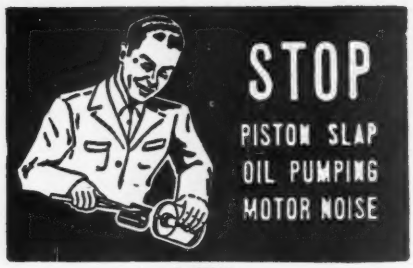
Geary front end suspension parts are precision made—well within specified tolerances. Every piece is inspected by a factory-trained inspector, and only perfect products are permitted to reach the market. Tested and approved by a nationally recognized testing laboratory, Geary suspension parts are guaranteed against defects in workmanship and materials.

Watch for the appearance of further Geary front end suspension parts. They will be announced as they are perfected and available. There will be no premature announcements. Notice of a new Geary suspension part means they are available. Ask your jobber for Geary front end suspension parts—for better all-around performance.

Sold Exclusively through Jobbers

GEARY & COMPANY, INC.

1518 Walnut Street, Philadelphia 2, Pennsylvania



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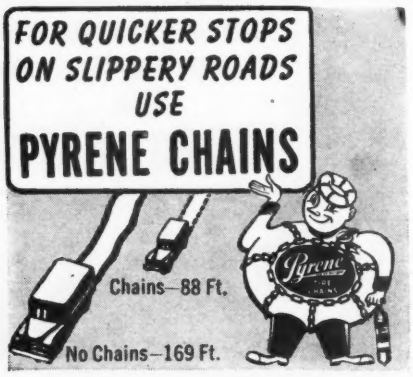
MASTER RECAMS

MASTER RECAMS are individually designed for all late model cars; easily installed without removing pistons. The profitable way to Stop Piston Slap, Oil Pumping and Motor Noise.

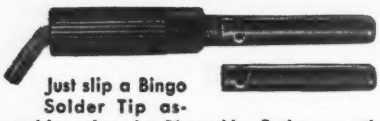
50c EACH

REGULAR DISCOUNTS TO JOBBERS AND DEALERS

WHERRY ENGINEERING COMPANY
3227-29 Morganford Rd., ST. LOUIS 16, MO.



Make
BODY SOLDERING
Faster . . . Easier
with a
BINGO SOLDER KIT



Just slip a Bingo Solder Tip assembly, using the Bingo No. 2 tip, over the tip of your welding torch and you're ready to do a fast job of body soldering. Use of the No. 1 tip quickly converts the Kit for light soldering.

Uses Acetylene Only.

COMPLETE KIT Consisting of body and two tips. } **$2.75**

JOBBERS! Write for complete merchandising plan.

BEAVERDELL Company
817 Webster Avenue, Chicago 14, Illinois

Spun Glass Absorbs Road Noise

Kaiser-Frazer and Graham-Paige are using spun glass "sound blankets" to insulate automobiles from objectionable road noises.

Adapted from wartime use in airplane cabins, the sound-proofing material is composed of spun glass and a fiber stock woven into blankets one-half inch thick. Cut to size, the sheets are used to line the interior surfaces of the passenger compartment to absorb road rumbles and hums.

The material is cemented to the steel roofs and quarter panels with conventional gum-dum deadener as the 1947 automobiles are built on the Willow Run assembly lines. Conventional quarter-inch flint coating is used on the floor panels.

The spun glass sheets also are used to line the fender ventilation ducts which take fresh air into the passenger compartment from the front grille. Lined with the new material, which provides insulation from engine heat as well as from sound, the fender "wind tunnels" take in fresh air with less noise at normal driving speeds.

Marquette Welder

The new Marquette welder is designed to give faster arc striking on light gauge metals. This welder, which is capacitor equipped for high power factor, employs special alloy bronze plugs and sockets, double current capacity in high heat stages. Automatic voltage control is an additional feature.

The Marquette hi-rate charger is specifically designed for high speed battery charging. Battery condition and the charging time needed are shown automatically on the basis of a 30 second test. It has full 100 ampere capacity. Marquette Manufacturing Company, Inc., Minneapolis 14, Minn.

Classified Advertisement

LIGHT PLANT PARTS. Electric pumps; farm batteries; parts for Delco and Westinghouse. Republic Electric Company, Davenport, Iowa.

Complete
SPRING SUSPENSION PARTS
HEAT TREATED ELECTRICALLY

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YOU CAN MAKE MONEY WITH McALEER —because McAleer Means Business!

Write today — for new Catalog and Dealer Prices on McAleer Automotive Finishing and Refinishing Materials.

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CRANKSHAFT GRINDING
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John P. Hughes Motor Co., Inc.
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FITS ALL CAR AND TRUCK MODELS
Hot Air De-icer

The Newest and Most Unique Automotive Accessory on the market. Wrapped in pairs for easy counter consumer sales. Immediate Shipment.

H AND L MANUFACTURING CO., Chicago 22, Ill.

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"The finest of the fine Pennsylvania oils"

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A NAME TO REMEMBER

VULCAN Products Include:

ACE-HY
Hydraulic Bumper Jack

The original and favorite hydraulic bumper jack with car owners and dealers since 1936. Always ready for use. Lifting range 18".

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Washes, Dries and Re-oils Air Cleaners in one operation. A money maker for Garages, Car dealers and Service Stations.

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Takes the body weight off the springs to insure proper lubrication of any car. Saves time. Increases profits.

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A real pump type jack. A low cost jack with sleeve action. Lifting range 18"—capacity 2500 lbs. Has Hook adjustment. All in one piece.

HYDRAULINER
Service Jack

A universal jack for all purposes. Hydraulic unit completely housed, yet easily removed for repair or replacement. Foot pedal action. Low point 4¾" —lifting range 18¾".

NEW
Hydraulic Axle Jacks

Something entirely new in Axle Jacks. Announcement with complete information at a later date. Watch for it.

These units will make shop operation more profitable for you and car operation more satisfactory for your customer. You can't go wrong by equipping your shop with, and selling your customers VULCAN products.

Sold Only Through Authorized VULCAN Distributors

VULCAN MANUFACTURING CO., Inc., WINONA, MINN.

WHAT VULCAN MAKES . . . THE WORLD TAKES

CLUTCH FACINGS • RIVETS
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HYDRAULIC BRAKE PARTS • BRAKE FLUID

SOUTHERN
FRICTION MATERIALS CO.- CHARLOTTE, N.C.

Costs of Automobile Materials Rise Slowly

An analysis of what has happened since the removal of price controls to the price of goods automobile manufacturers buy shows a creeping upward trend in some basic materials and component parts. Lead and copper almost immediately rose in price and then leveled off at about the world level. However, since then lead has taken another boost, so that today it is at least 50 per cent above the level prevailing under OPA. About mid-December, steel companies raised the price of steel sheets and strip by $1 to $3 a ton. Other items that have increased are copper wire, 18 per cent; paint, up to 19 per cent; fractional horsepower motors, 25 per cent; brass stock for screw machine products, 20 per cent; rubber goods, up to 18 per cent, gray iron castings from 8 to 37 per cent; electrical equipment from 10 to 30 per cent, and crankshafts, 12 per cent. Undoubtedly these heavier costs had much to do with recent price increases by all passenger car manufacturers except Ford and Packard, but there is no indication of a further boost in car prices in the immediate future, unless wage increases are won by organized labor.

Twin Disc Clutches

A series of small hydraulic couplings for use with induction motors and small internal combustion engines has been announced by the Twin Disc Clutch Company of Indianapolis, Ind.

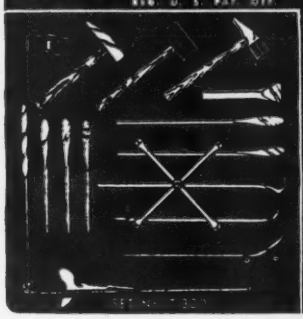
The six couplings in the series have various ratings, ranging from one to 25 horsepower, at 1,800 rpm. They supplement the line of Twin Disc Hydraulic Couplings for larger applications. According to the manufacturer, these coupling units prevent stalling, allow the engine or motor to be fitted to actual running requirements, eliminate the need for shear pins and similar "break-and-replace" protection for driven parts, distribute the load on multiple engine or power drives, and, with a standard motor, permit the motor to start under no load and thus makes high torque available for starting.

If you've tried them all
You'll stick to
HALL
for Valve and Cylinder Servicing Equipment
THE HALL MFG. COMPANY
TOLEDO 7, OHIO

CORDS
PISTON RINGS
The Modern Way!
ENGINEERED PISTON RING SETS

Sealed IN PACKAGES
New scientifically designed, precision made, Thermo-Formed Cords Piston Rings now available for all motor vehicles. Exclusive patented Concave Steel Segment Rings in Cords combination sets stop cylinder wear—save gas and oil
There are CORDS for every car
Every car needs CORDS
CORDS
PISTON RING MANUFACTURING CO.
371 EIGHTH AVENUE • SAN DIEGO, CALIFORNIA

KEN TIRE TOOLS
REG. U. S. PAT. OFF.



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SEE YOUR LOCAL JOBBER OR WRITE FOR LITERATURE
KEN TOOL MFG. CO.
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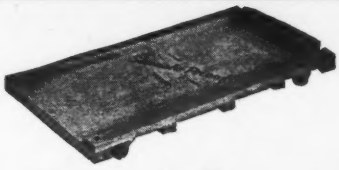

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CREEPERS
Sold by all leading jobbers
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Ask your Shurhit jobber or write us for details on these super-quality replacement parts. Complete Shurhit line includes Condensers, Contact Points, Rotors, Caps, Coils, Brushes, Cut-Outs, Switches, and Spark Plugs.
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Repair
ENGINE CRACKS
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30 MINUTES!
FAST! EASY TO USE!
No special equipment or training needed with Wonder Seal. Write for Folder.
OFTEN IMITATED . . .
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Measurably Better
Service Springs
FOR ALL CARS AND TRUCKS
SERVICE SPRING COMPANY
INDIANAPOLIS 6, INDIANA

BUY WITH CONFIDENCE from the jobber who carries PACKARD CABLE

Packard cable on your jobber's shelf is a good tip-off that he stocks quality products *all along the line.*

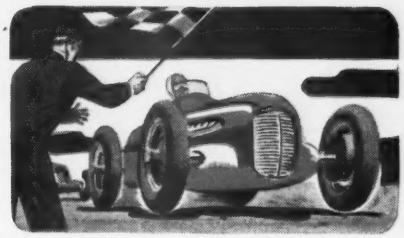
Figure it this way. He buys Packard cable on *merit alone,* since Packard makes nothing but cable in the automotive field—offers no "tie-in sales" or "package deals" which require him to accept merchandise he doesn't want, in order to get a line he does want. It's there because he's convinced it's the best product of its kind. And if he buys cable that way, you can bet that he applies the same good judgment to the other products he carries.

Buy with confidence from the jobber who handles Packard cable.

HERE'S WHY YOUR JOBBER CARRIES PACKARD CABLE

He Believes in Quality

. . . knows that Packard research and manufacturing are concentrated on one line—automotive cable. That's what Packard's been making for more than 40 years.



He Believes in Leadership

. . . has watched Packard lead the field in the use of plastics, lacquers, synthetics and other developments to make cable last longer, perform better.

He Believes in Sales

. . . knows that Packard cable has better acceptance, because it is used as original equipment in more new cars than all other makes of cables combined.

YOU'RE RIGHT WITH Packard

REG. U. S. PAT. OFF.
TRADE MARK

PACKARD ELECTRIC DIVISION
GENERAL MOTORS CORPORATION
WARREN, OHIO

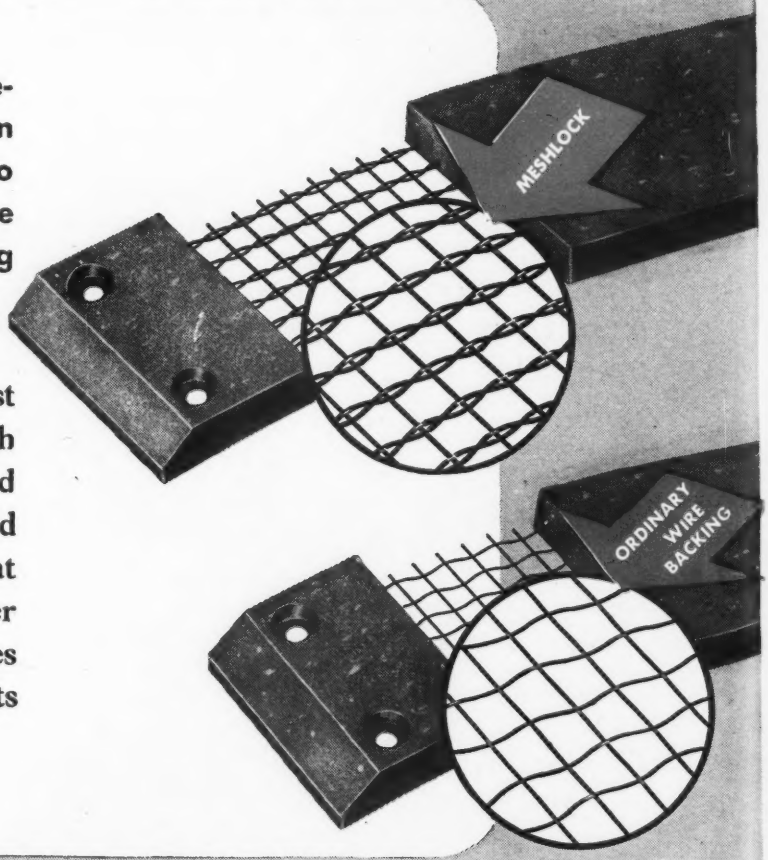
FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

MESHLOCK

.... it holds like a wrestler's scissors

MESHLOCK Wire Back Reinforcement prevents "spot-bulge" when riveting lining to brake shoes — no more spoiled linings, spongy brake pedal, "daylight" between lining and shoe.

Two to one . . . another Grafild first – MESHLOCK puts *two* tough wires where only one is the accepted practice. This effective method forms a lock in the wire mesh that prevents lining from "giving" under the stress of riveting. This lining goes on flat to the brake shoe at all points . . . stays flat in service.



WORLD BESTOS CORP. NEW CASTLE INDIANA

Your best rural customers read Country Gentleman

Rural auto dealers know this. Asked what rural magazine would be most effective, from an advertising standpoint, in helping them sell their prospects

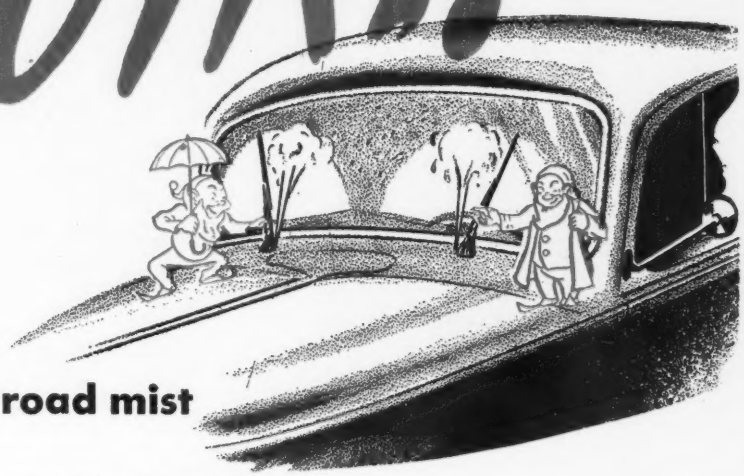
they chose Country Gentleman almost 3 to 1

Automotive advertisers know this. They invest more advertising dollars in Country Gentleman than in any other farm magazine.

Country Gentleman

No. 1 with FARMERS—RURAL DEALERS—ADVERTISERS

Road Splash! Squirt!



NOW is the time to install Trico's Two Little Squirts to wash away muddy, grimy road mist

• Trico's "Two Little Squirts" can be one of your biggest sellers during the coming months.

Extensive national advertising will be reminding millions of motorists that the Trico Windshield Washer instantly clears windshields of the blinding mist whipped up by traffic during winter's and spring's thaws and rains.

Easily and quickly installed on any make of car, bus or truck . . . new or old. Thousands of users say they would not be without this newest motoring necessity.

only $6.25 plus nominal installation

TRICO *Windshield Washers* **Operated by harnessd air power**

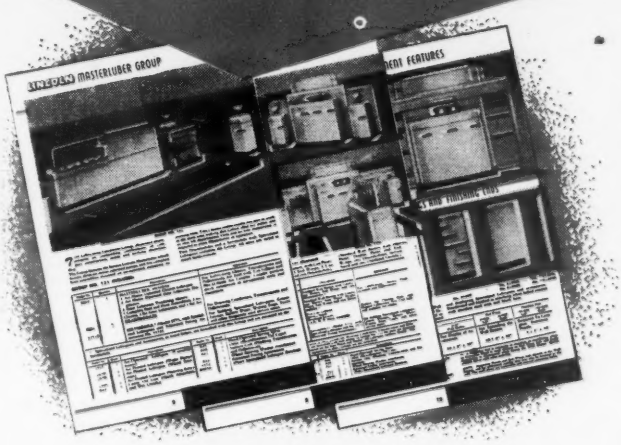
Trico Products Corporation, Buffalo 3, New York

LINCOLN

LUBRICATING EQUIPMENT

GROUP #131 ON-THE-JOB

Your SELECTION MADE EASY!



The complete Lincoln Lubrication Group No. 131, in the service department of a West coast dealer, presents an outstanding combination of compact construction, utility and striking showmanship. It features the famous Lincoln Masterluber which houses three air-motor operated lubriguns, and five complete hose assemblies mounted on air-operated, automatic retracting reels. The outlet assemblies include two for gear lubricant, two for chassis lubricant and one for air. The design of the unit enables two men to work at the same time making this group ideal for one or two-lift departments. Two Lincoln Drainmobiles and a Lincoln Servmobile with Specialized Lubriguns complete the group.

Complete Lubrication Departments

Easy to Order . . . One Price

Call Your LINCOLN Wholesaler Or Write Us

Lincoln "Matched Equipment Groups" are available to meet your individual requirements. Your Lincoln Wholesaler will gladly show you the new Lincoln Catalog which will help you quickly visualize just how this outstanding Lubricating Equipment will look in your own lubrication department. Get in touch with him today.

LINCOLN

A 47-3

Pioneer Builders of Engineered Lubricating Equipment

LINCOLN ENGINEERING COMPANY
3701 NATURAL BRIDGE AVE., ST. LOUIS 20, MO., U. S. A.

PUTTING ON CHAINS WAS TOO MUCH TROUBLE!

So, he couldn't stop and wound up in real trouble!

You can help cut winter accidents! Every time you sell a pair of Campbell *Lug-Reinforced* Tire Chains to a truck operator, or to a motorist, be sure to stress the importance of *using* them when streets and roads are slippery. Chains in the trunk, or hanging on the garage wall, are useless!

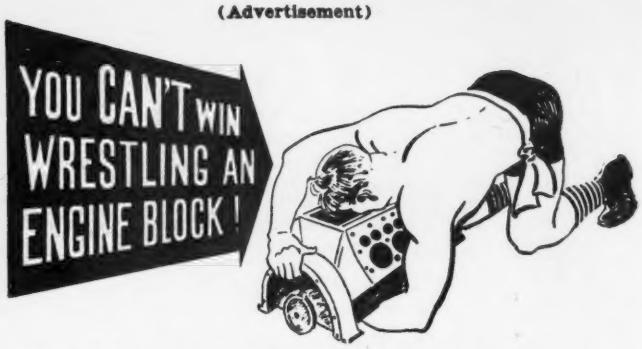
The exclusive, patented* saw-toothed lugs of Campbell *Lug-Reinforced* Tire Chains dig right into ice and snow for the grip that means safe starts and stops without dangerous slip and skid. Tough, hard-wearing steel and one-piece construction mean increased chain mileage. *International Chain & Mfg. Company, York, Pennsylvania.*

The CAMPBELL Line

*U. S. Pat. No. 2,093,547 Canadian Pat. No. 223,568

CAMPBELL
Lug-Reinforced
TIRE CHAINS
THE CHAIN WITH THE SAW-TOOTH GRIP

(Advertisement)

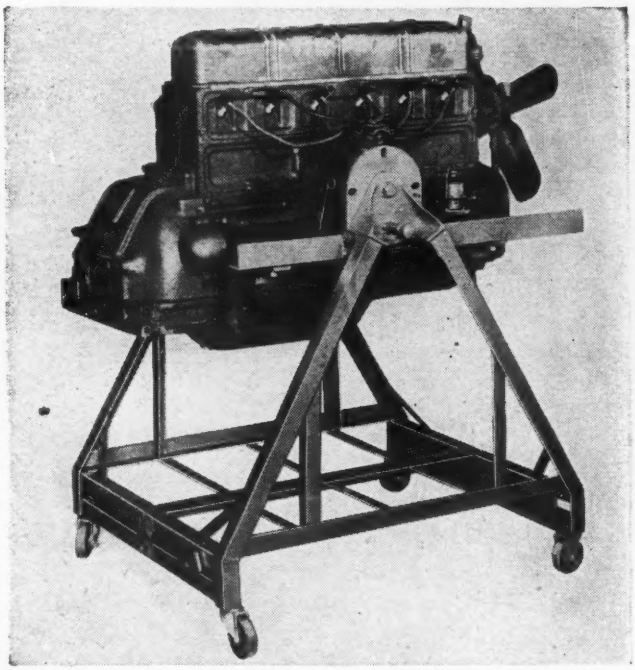


BUT—You Can Win with This

New Universal Engine Overhaul Stand

. . . Performs Every Operation Without Removing Block from Stand

This Clayborne Universal Model 201 Engine Overhaul Stand makes possible production line efficiency in every shop, no matter how small . . . increases production and lowers cost on every operation. Eliminates all handling of motor block during rebuilding. Entire block can be revolved for complete accessibility at all times for grinding seats, cutting valve clearance, etc. All parts can be replaced on motor ready to return to the chassis. Sturdily constructed. Completely mobile. Safe and easy to operate. Block may be steam cleaned on stand.



Chevrolet Engine mounted on Clayborne New Style Universal Stand Model 201.

The Clayborne Universal Model 201 Engine Overhaul Stand handles all in-line automotive engines to approximately 600 lbs. This stand readily handles the complete engine including oil pan, clutch housing and accessories. The special quick mounting clamps which grip engine pan rails are a special feature of this highly developed stand.

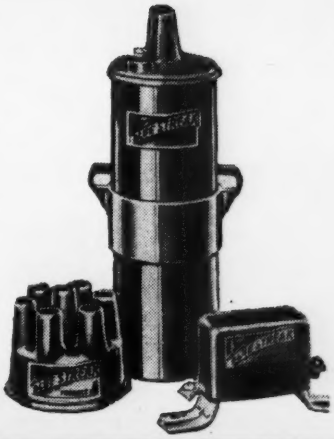
SEE YOUR JOBBER—OR WRITE TO—

CLAYBORNE MANUFACTURING CO.
209 S. LA SALLE ST., CHICAGO 4, ILL.

Trouble-Chuter! Ever imagine yourself up there? Just you, Old Man Sky and a couple of yards of nylon to hang your life on. Takes a heap of trust in the people who rig the chute.

You know the feeling. Pretty much like reaching for a replacement part to install in a repair job. You have to trust it's going to perform the way you plan... put a little gusto in an overworked motor... take the grind over rutted roads in all kinds of weather. *You hang your reputation on the parts you use.*

Lucky for you, there are ignition parts you can trust as if you'd built them yourself — Blue Streaks! Made of the finest grades of raw materials; carefully inspected at every turn — no wonder Blue Streak ignition parts can take more... and last longer. Try them; their quality does you proud.



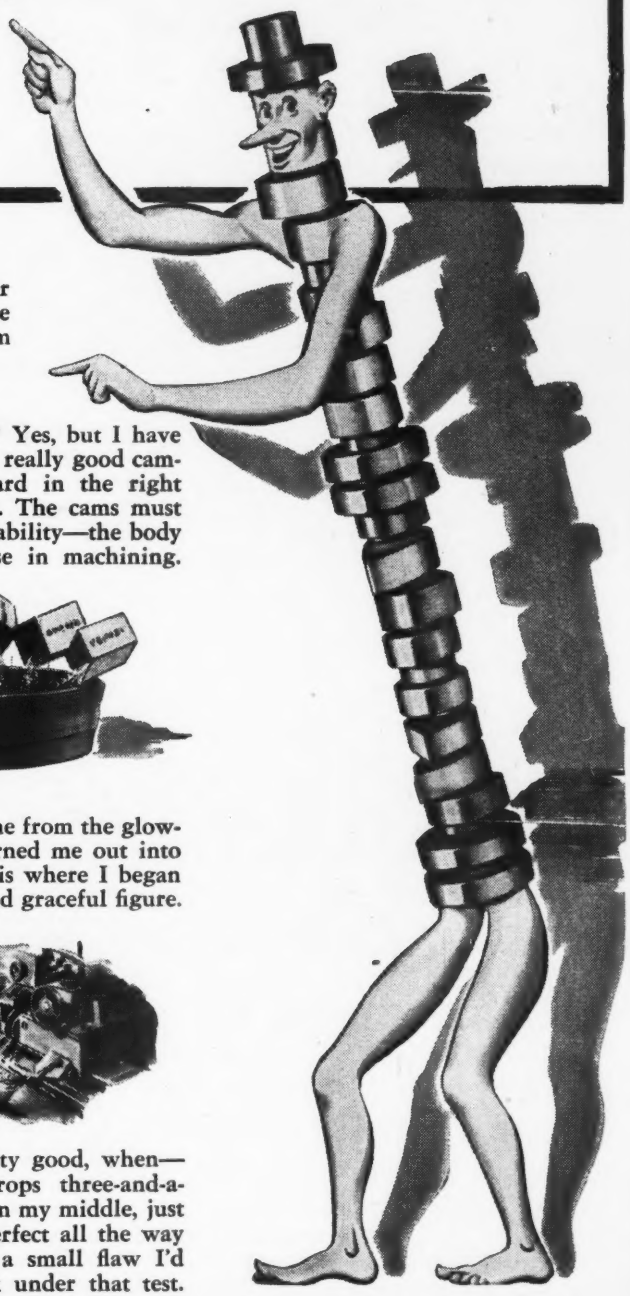
BLUE STREAK IGNITION PRODUCTS

FOR LONG LIFE • PEAK PERFORMANCE

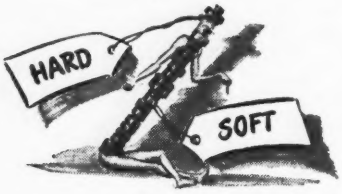
STANDARD MOTOR PRODUCTS, INC.
37-18 NORTHERN BOULEVARD, LONG ISLAND CITY, NEW YORK

The Story of a Genuine Ford CAMSHAFT

or WHY IT PAYS TO USE GENUINE FORD PARTS

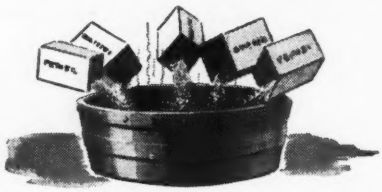


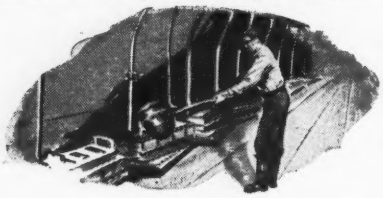
1 Remember me? I'm Cast Camshaft—and I'm a pioneer because I'm the first cast camshaft in the automotive industry. Ford engineers figured out how to do it. I'm harder and tougher—and my life is extra long.



2 Did I say "harder"? Yes, but I have my soft spot, too. A really good camshaft has to be hard in the right places and soft in others. The cams must be hard for greatest wearability—the body of the shaft soft for ease in machining.

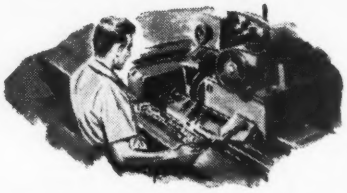
3 Ford engineers started me on my way as a ladle of molten metal. Made up of things like pig iron, carbon, manganese, silicon, copper, and even a dash of chromium. Each ingredient was carefully measured for just the right amounts.

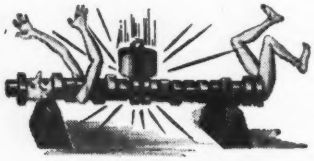




4 Soon a ladle lifted me from the glowing furnace and turned me out into molds. Right there is where I began to get my present form and graceful figure.

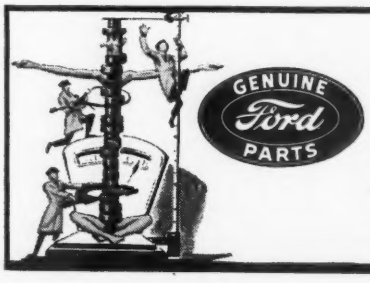
5 Then came the machine treatment—41 different operations to give me that perfect camshaft complexion . . . to make me a perfect fit. Used to take 61 operations in the days of the old forged camshaft. They save real time in making me!





6 So I'm feeling pretty good, when—bam—somebody drops three-and-a-half pounds right on my middle, just to make sure that I'm perfect all the way through. If I had even a small flaw I'd break like a match stick under that test.

7 And all the time people have been going over me with gauges and what have you—making sure that my cam contour is accurate to within .001 of an inch. You know, those Ford people certainly are great for precision.



So here I am—a Genuine Ford Part, at your service. Ready and anxious to get on the job with the push rods to operate the valves. And I'll do the best job you ever saw, too—for I'm made right to fit right, work longer.

FORD MOTOR COMPANY

Inlite is Brake-smileage Insurance

Installing Inlite is like taking out brake-smileage insurance for yourself and customers. When Inlite goes on your customers go off smiling — and stay that way because Inlite comes immediately into normal operation—and gives the same performance on the first braking as at 10,000 miles.

So you know that customers need not come back for brake lining readjustments when Original Equipment Quality Inlite goes on.

Inlite keeps customers happy because they get more miles of smooth, straight-line stops. Every Inlite segment has the same uniformity of structure and the same long wear factor. And you will be happy because of the time and labor and profit saving that Inlite makes possible. Order General Motors Quality Inlite Brake Lining from your jobber.

A GENERAL MOTORS PRODUCT

Genuine
ORIGINAL EQUIPMENT
BRAKE LINING

UNITED SERVICE MOTORS

Available Everywhere
Through United Motor
Service Distributors

INLAND MANUFACTURING DIVISION • *General Motors Corporation, Dayton, Ohio*

★INLITE★
BRAKE LININGS

For men who want to GO PLACES in the Automotive Service Business

ARE YOU SATISFIED with the progress you're making? Are you convinced that you're getting the most you can out of the automotive service business? If not, this is the time for you to start building a better future. And here is how a United Motors franchise will help you.

More of Everything You Need

Good lines, of course, help you get ahead in this or any other business. United Motors gives you the best. More than that, United Motors makes available experienced, helpful counsel—the latest service information—expert sales and merchandising programs—complete parts lines for old cars as well as new—a business-boosting United Motors Service sign—and strong, consistent advertising support.

With United Motors helping you along the way, you can go as far as your own efforts and initiative will take you.

Greatest Pre-Sold Market in the Field

Here are the United Motors lines—*all original equipment on the country's leading cars and trucks*—that bring you the largest pre-sold market in America: Delco-Remy Starting, Lighting and Ignition—Delco Batteries—Delco Hydraulic Brakes—Delco Radios—AC Fuel Pumps, Gauges and Speedometers—Delco Shock Absorbers—Guide Lamps—New Departure Ball Bearings—Klaxon Horns—Hyatt Roller Bearings—Harrison Radiators, Thermostats and Heaters—Inlite Brake Lining.

You don't have to take on all these lines at once. You can choose only one or a few of them and add more as you grow soundly and steadily.

See your United Motors distributor for a friendly, helpful discussion of your situation . . . or write us direct and we will arrange an interview for you.

UNITED SERVICE MOTORS

UNITED MOTORS SERVICE
DIVISION OF GENERAL MOTORS CORPORATION
GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

Always check gas and oil filter lines... don't let your customers be "drips"

Make Your Own Hose Assemblies with the RESISTOFLEX LINEMAKER ASSORTMENTS!

With the Linemaker Assortment, you can hand-assemble every type automotive hose and replace gas-oil hose on cars, trucks, tractors, marine engines with Resistoflex gas-oil hose with COMPAR tube.

Now you can give your customers the advantages of the one gas-oil hose that will not rot, clog, leak, break, swell, or collapse—Resistoflex with COMPAR tube.

Remember this: Resistoflex gas-oil hose with COMPAR tube is totally unaffected by all types of gasoline, gasoline additives, Diesel fuel, lubricating oils, crankcase additives. It is totally unaffected by vibration and bending. Bonded layer construction eliminates internal friction. It withstands more tension and torsion than hose of any other construction.

Ask your jobber for the Resistoflex Linemaker Assortment!

RESISTOFLEX

Trade Mark Reg. in U. S. & Can. Pat. Off.

Resistoflex Corporation
Belleville 9, New Jersey

PLANTS: Belleville, N. J.; Elkhart, Ind.; Toronto, Can.

Original Equipment on vehicles, vessels, aircraft, oil filters.

A complete line of re-usable couplings . . . hose fittings.

FEL-PRO *Black Steel Copper!*

HEAD GASKETS

Yours Is A *Complete Choice* When You "CALL FOR FEL-PRO"

As you know, some cars come equipped with Black Head-Gaskets . . . some with Steel . . . and the most with Copper. Whichever type you want to use on a job . . . whether to match original equipment or because of your own preference . . . Fel-Pro has it. All are precision made—Tops in construction and performance dependability.

These Fel-Pro Head Gaskets—Black, Steel or Copper—are available individually, or better still as part of FULL Gasket Sets for all popular makes and models of cars and trucks. It pays to use Fel-Pro Full Gasket Sets! Not only do you do a complete and a better job that pleases customers but one that increases your profits. When you call for Fel-Pro Full Gasket Sets, you're in good company—for the builders of many of the finest engines and automotive equipment use Fel-Pro Gaskets, too!

2097

FEL-PRO *tect*

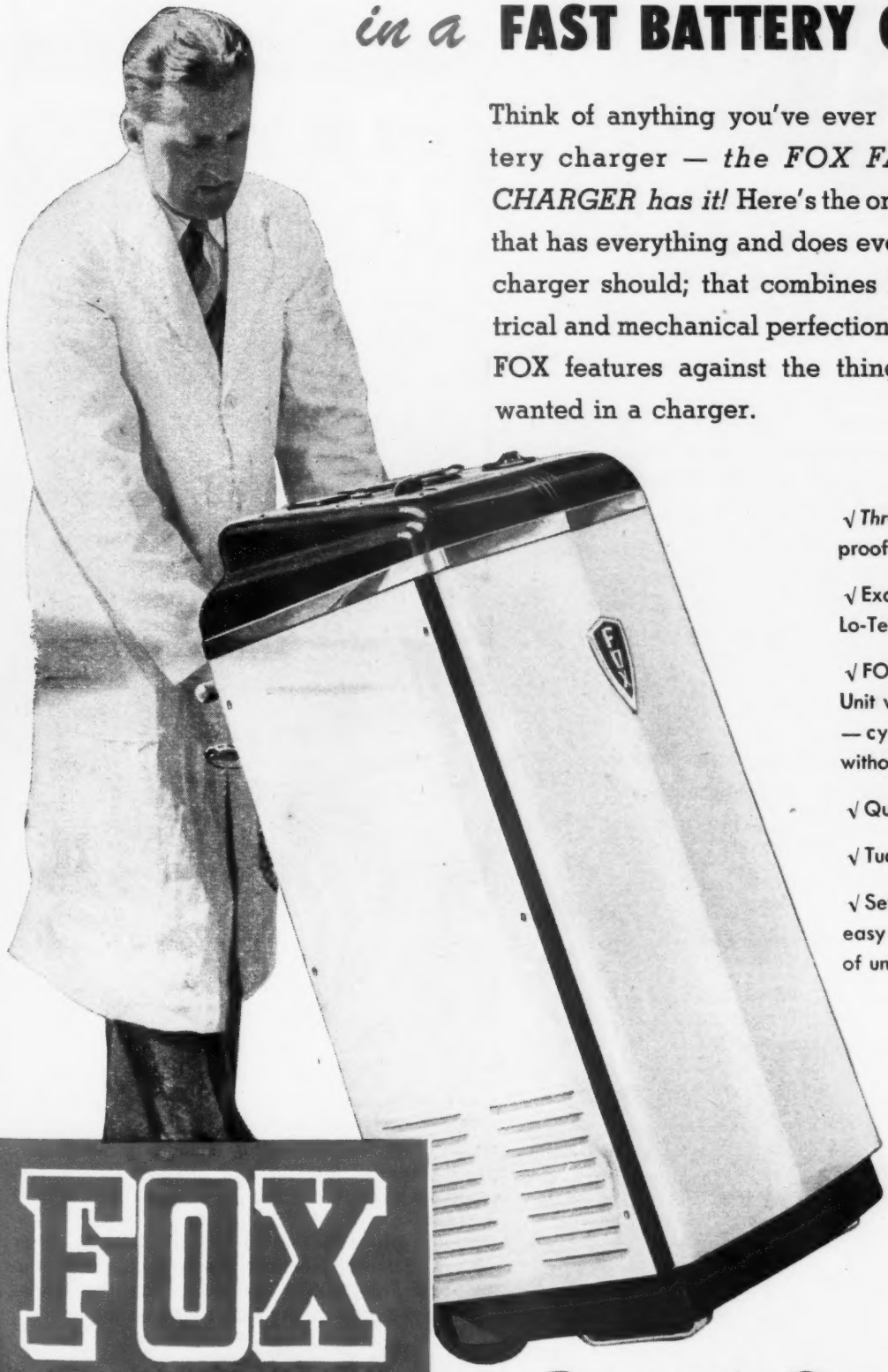
Full Gasket Sets, Packings, Grease Retainers

FELT PRODUCTS MFG. CO.

1521 Carroll Avenue • Chicago 7, Illinois

STOP Every "Drip" and Keep Him STOPPED . . . USE FEL-PRO!

FOX *has everything you ever wanted in a* FAST BATTERY CHARGER!



Think of anything you've ever wanted in a battery charger — *the FOX FAST BATTERY CHARGER has it!* Here's the one battery charger that has everything and does everything a battery charger should; that combines beauty with electrical and mechanical perfection. Check this list of FOX features against the things you've always wanted in a charger.

√ *Three* direct-reading, waterproof voltmeters.

√ Exclusive waterproof FOX Lo-Temp transformer.

√ FOX High-Rate Discharge Unit with FOX solenoid switch — cycling is accomplished without changing connections.

√ Quick-release terminal clips.

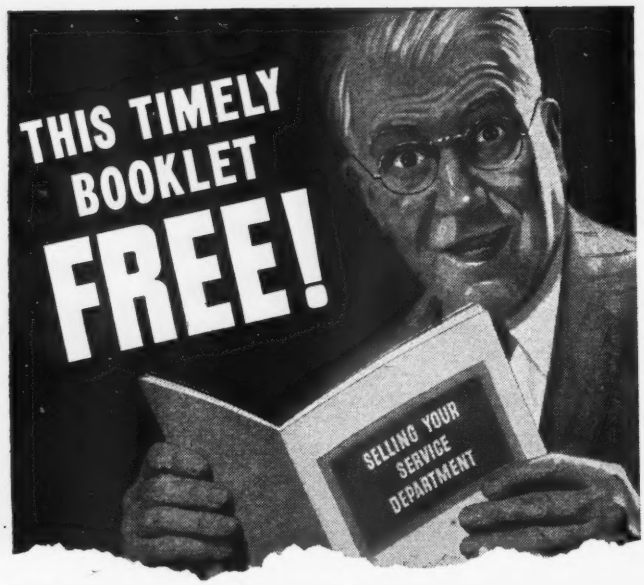
√ Tuck-away cables.

√ Set in 10" wheels insure easy moving; reduce width of unit.

FOX
PRODUCTS COMPANY
PHILADELPHIA 41, PA.

Tomorrow's Battery Charger is available today!

BUY A FOX FAST BATTERY CHARGER



Here's a booklet that's as timely as tomorrow—jam packed with proved ideas for promoting your Service Department. It contains methods, forms and materials necessary to make intelligent customer follow-up pay you dividends in sales and profits.

Get this booklet, or any of the 9 other R & R files containing information regarding forms and materials on their vital subjects. You don't even need to write a letter—just check off your wants on the list below, attach it to your letterhead, and mail to

The Reynolds & Reynolds Company, Dayton 7, Ohio.

Please send information on the subjects checked:

- ☐ Selling Your Service Department
- ☐ Service Dept. Operating Forms
- ☐ General Office Forms
- ☐ Accounting Aids
- ☐ Paper Tools for Handling Car Sales
- ☐ Parts and Accessory Control
- ☐ Credit and Collection Forms
- ☐ Dealer Stationery and Checks
- ☐ Payroll Systems and Forms
- ☐ Factory Designed Accounting System

The REYNOLDS & REYNOLDS

COMPANY • DAYTON 7, OHIO

Established 1866

WESTERN BRANCH • 400 W. PICO BLVD. • LOS ANGELES

PUT

"thermostat replacement" on your job ticket

NOTE: Adjustable—for summer, alcohol or permanent anti-freeze.

Pulling our cars through the war years taught us all a lot about the endurance of individual parts and their relation to overall performance. For example, the cooling system thermostat includes moving parts which wear out. Replacement is simple and incidentally quite profitable—and not, as many used to think, seasonable.

The best time for thermostat replacement is whenever the hose connections are opened. So include the word THERMOSTAT on your shop ticket—and replace as part of every motor tune-up job.

DOLE *Replacement*

THERMOSTATS

THE DOLE VALVE COMPANY

1901-1941 Carroll Ave., Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL CITIES

THE SENSATION OF THE A.S.I. SHOW

AGAIN PUROLATOR engineering leads the oil filter industry with the sensational Purolator Micronic Oil Filter. Hundreds of dealers at the A. S. I. Show called this amazing new filter the "hit" of the Show.

With three times the filtering area of pre-war filter elements, the Purolator Micronic Filter traps and holds triple the amount of dust, dirt, hard carbon, grit or grime that works its way into lubricating oil—even particles as small as a micron (.000039 of an inch). Being waterproof and warp-proof it is entirely unaffected by crankcase dilution or acids. With features like these, it's no wonder they call the new Purolator Micronic Oil Filter the biggest thing that's ever happened in the oil filter industry.

KEEP OIL FREE FROM ABRASIVES WITH **PUROLATOR**

PUROLATOR
MICRONIC OIL FILTER

PUROLATOR PRODUCTS, INC.
NEWARK 2, NEW JERSEY
IN CANADA: PUROLATOR PRODUCTS (CANADA) LTD., WINDSOR, ONTARIO

DOES YOUR COOLING SYSTEM LEAK?

Best For Cracked Blocks, too!

DOES THE JOB OR YOUR MONEY BACK

When leaks develop in Cooling Systems, remember Moguloid! It's the amazing colloidal compounded of chrome and copper flour that cures block cracks and cooling system leaks fast with a positive actual metallic bond that will last a lifetime For guaranteed results, be sure that you get Moguloid.

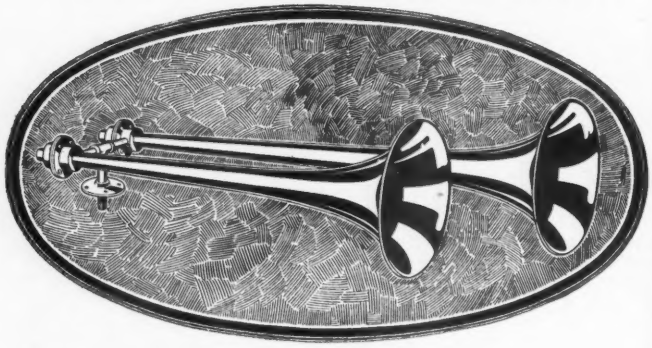
GET YOUR MOGULOID NOW

MOGULOID COMPANY OF AMERICA

Division of Metallizing Co. of America

1330 W. Congress St., Chicago 7

BUELL AIR HORNS



A LIFE SAVING . . .
TIME SAVING . . .
SAFETY SIGNAL

THAT IS A MONEY SAVER TOO!

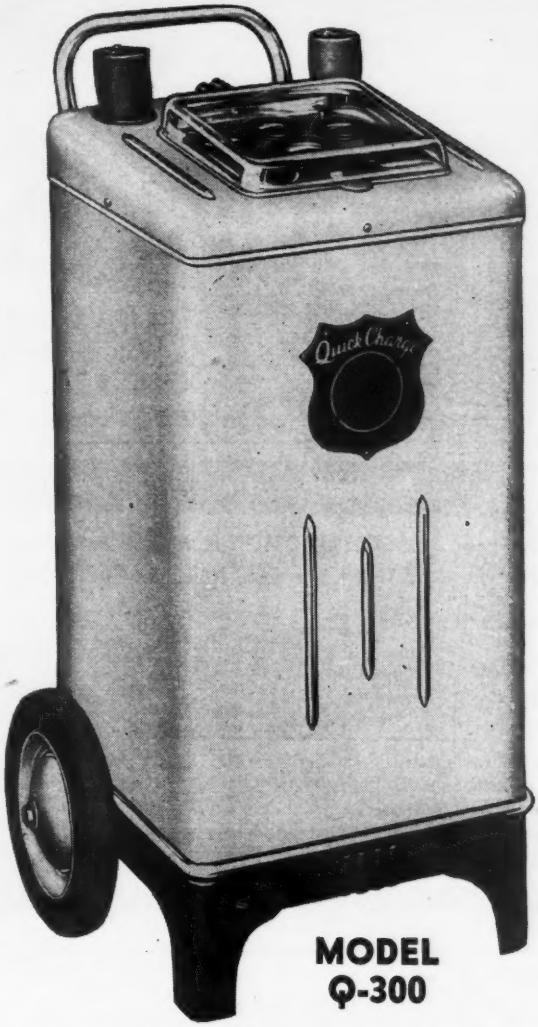
BUELL MANUFACTURING CO.
2331 COTTAGE GROVE AVE., CHICAGO 16, ILL.

MOTOR AGE

—is a publication keyed directly to the needs of the maintenance field. Built on the requirements of repair shops. Edited by Bill Toboldt. Read it every month.

A Chilton Publication

CHESTNUT AND 56TH STS.
PHILADELPHIA 39, PA.



MODEL
Q-300

A NEW Feature for

Quick Charge

BATTERY CHARGER
TESTER AND DISCHARGER

Plexi-Glass

INSTRUMENT PROTECTION!

These popular chargers now available with PLEXI-GLASS cover which provides positive protection for precision instruments. Also NEW color combinations at no extra cost.

•

WRITE FOR CATALOG SHEETS AND PRICES

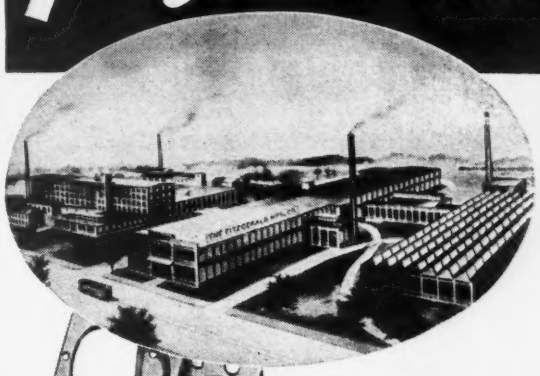
QUICK CHARGE, INC.

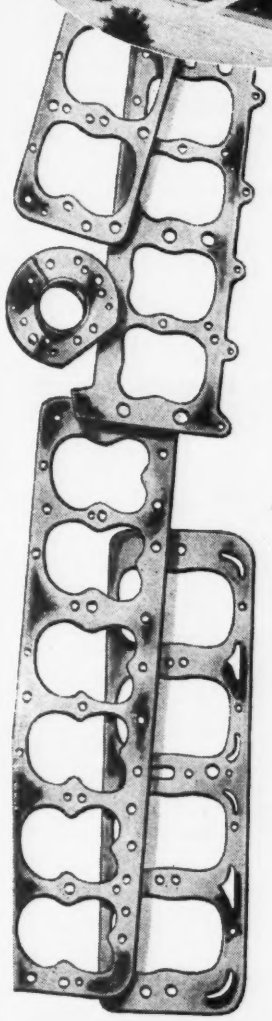
Manufacturers of
Battery Chargers, Steam Cleaners
and Electrical Appliances

1750 N. E. 10TH, OKLAHOMA CITY 4, OKLA.

Fitzgerald

THE BIG NAME IN GASKETS





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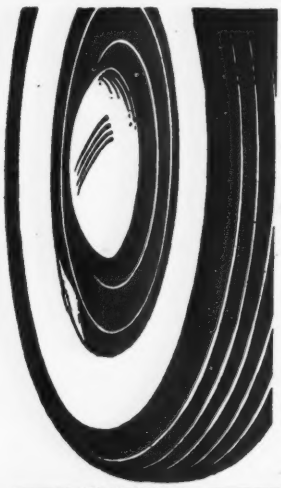

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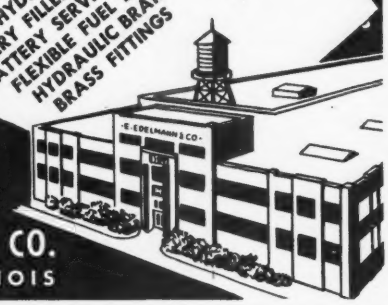

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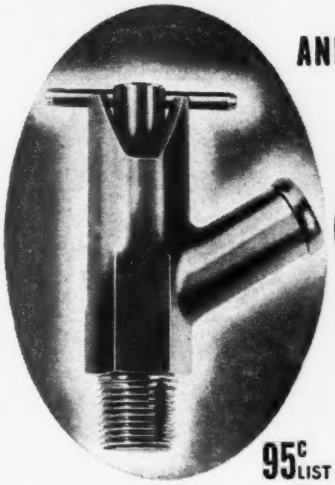
MILEY Black Gold BRAKE LININGS



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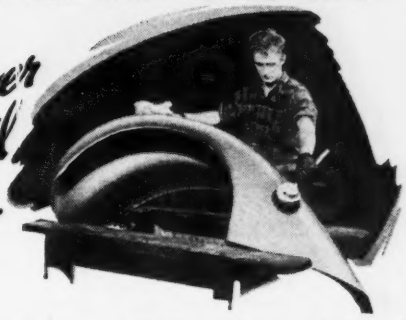

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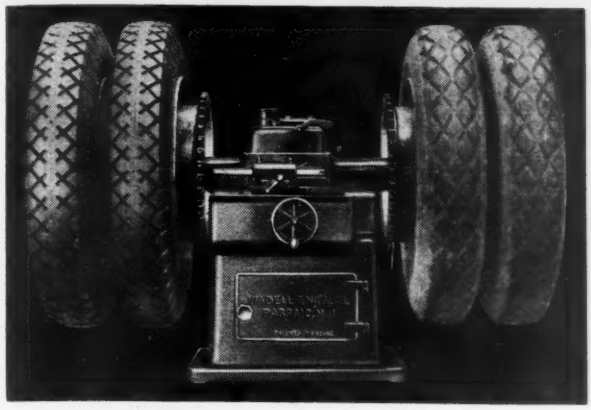
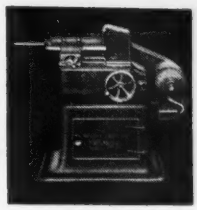


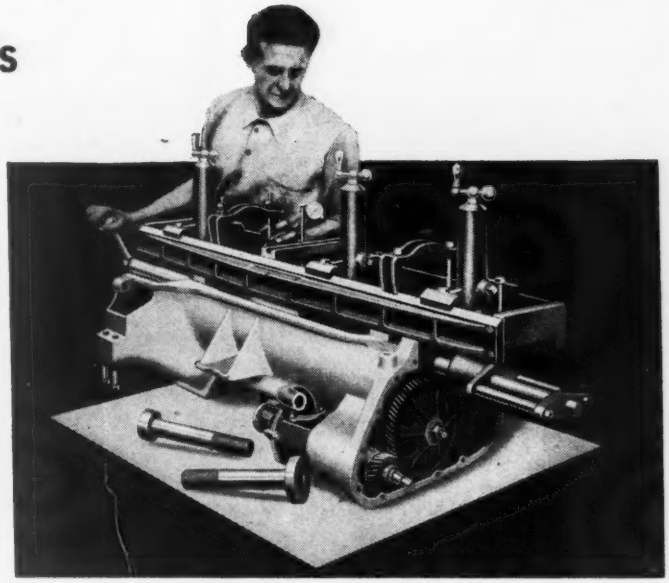
Double Spindle Brake Drum Lathe with two 1600-lb. tires sets mounted—3200-lbs. total-cutting action is always free and easy.



The Wadell Single Spindle for Smaller Shops.

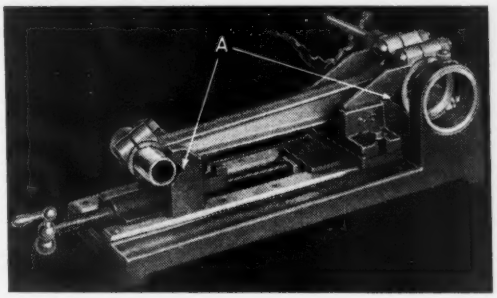
WE can reduce your Costs

You can increase Profits



The Wadell Model A Main Bearing Boring Fixture in operation—this fixture is applicable to 95% of the present-day motors.

The Wadell Connecting Rod Bearing Fixture with rod set up and ready for boring. Note the adjustable V's (A) that hold the rod securely in place.



For nearly 25 years we have designed and built equipment for automotive maintenance work—for fleet service shops, pleasure car garages and municipal transportation maintenance shops. This equipment will finish jobs faster, more accurately, more economically—results that mean more profitable operation, less reconditioning time, longer equipment life.

WE manufacture two Brake Drum Lathes—the only double spindle Brake Drum Lathe*—and a Single Spindle Model. The Double Spindle is of a unique design that features individual control for each spindle, two sturdy carriages with independent automatic and hand wheel feeds. Both machines have three spindle speeds, micrometer tool feeds and are capable of handling the heaviest sets of double wheels.

The Bearing Fitting Fixtures shown will take all the guesswork out of connecting rod and main bearing fitting. Both are extremely accurate, rigidly constructed tools that are simple to set up and easy to operate. A carbide tool with a micrometer setting and an extremely fine feed assures a mirror finish every time.

This equipment is available for immediate delivery. You'll be on the way to greater profit if you send for complete details on Wadell Automotive Manufacturing and Maintenance Equipment today.

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WADELL WE ENGINEERING COMPANY

for 23 years

Aircraft and Automotive Manufacturing and Maintenance Equipment

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Write for latest specification sheets on these two Champ-Items. Specify No. 500 Specification sheet.

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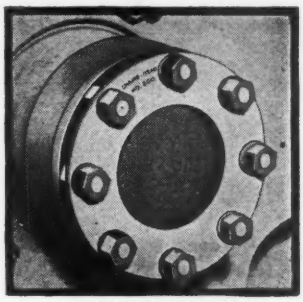

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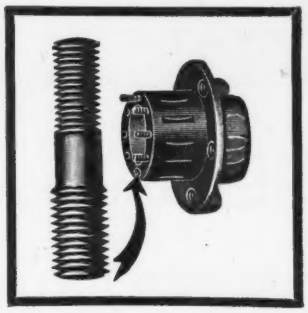
The No. 500 Series Rear Axle Stud Locking Rings for Trucks. Lock all studs together as one unit; provide the extra bearing, stop rock at tip, and your stud troubles are over.

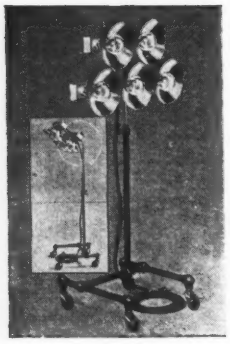


The No. 407 Series of Oversize and Standard Rear Wheel Studs for all trucks—Use oversize studs when threads are stripped or stud is broken off; or when wheel flange holes and axle flange holes are worn.

RE-CONDITIONING CHAMP-ITEMS INC. SHORT CUTS

CHAMP-ITEMS INC., 6191 Maple Ave., St. Louis 14, Mo.

CUT DRYING TIME FROM HOURS TO MINUTES *to* INCREASE PRODUCTION *and* PROFITS *with* NALCO Infra-Red DRYING UNITS

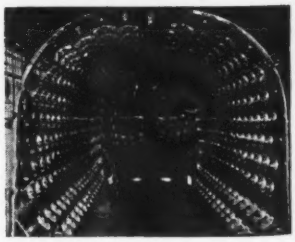


The 5-lamp portable unit will serve many practical purposes in the automotive shop. Mounted on casters for easy moving. Can be tilted at any angle and may be swung over into a vertical position as well as in a horizontal position.

Nalco Infra-red drying units will greatly increase drying efficiency and cut drying time of paint jobs considerably. Three or four minutes drying time for lacquer primer-surface undercoats—and it's ready for sanding! Seven or eight minutes drying of synthetic enamel coats permits polishing or sanding within 15 or 20 minutes.

The installation of Nalco Infra-red drying units in your shop will result in faster drying, better paint jobs, faster production and increased customer satisfaction.

Touch-up jobs can be dried in a fraction of the time formerly required by the use of highly efficient Nalco Infra-red.



Entire auto body being quickly and uniformly dried with banks of Nalco Infra-red lamps.

NALCO INFRA-RED DRITHERM

NORTH AMERICAN *Electric Lamp Co.*

1071 TYLER STREET ● ST. LOUIS 6, MO.

Send for booklet "FACTORY METHODS in YOUR SHOP"

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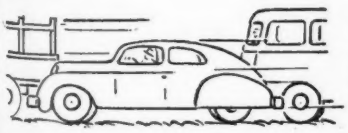
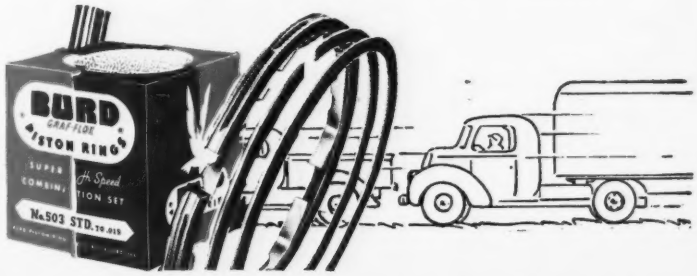
You'll soon be seeing hundreds of Burd's new highway signs. Every one of them will carry the name of a friend . . . the nearest distributor of Burd Products. These flashing Burd displays are doing a two-fold job . . . popularizing Burd "Graf-Flox" Piston Rings with the country's millions of motorists . . . identifying to garage and service men dependable sources of quality automotive replacement parts. When you're ready to order the rings and things for that next rebuilding job, call on the Burd Jobber. He'll give prompt, courteous service on all your requirements . . . give you the right set of Burd "Graf-Flox" Piston Rings to boost your reputation.



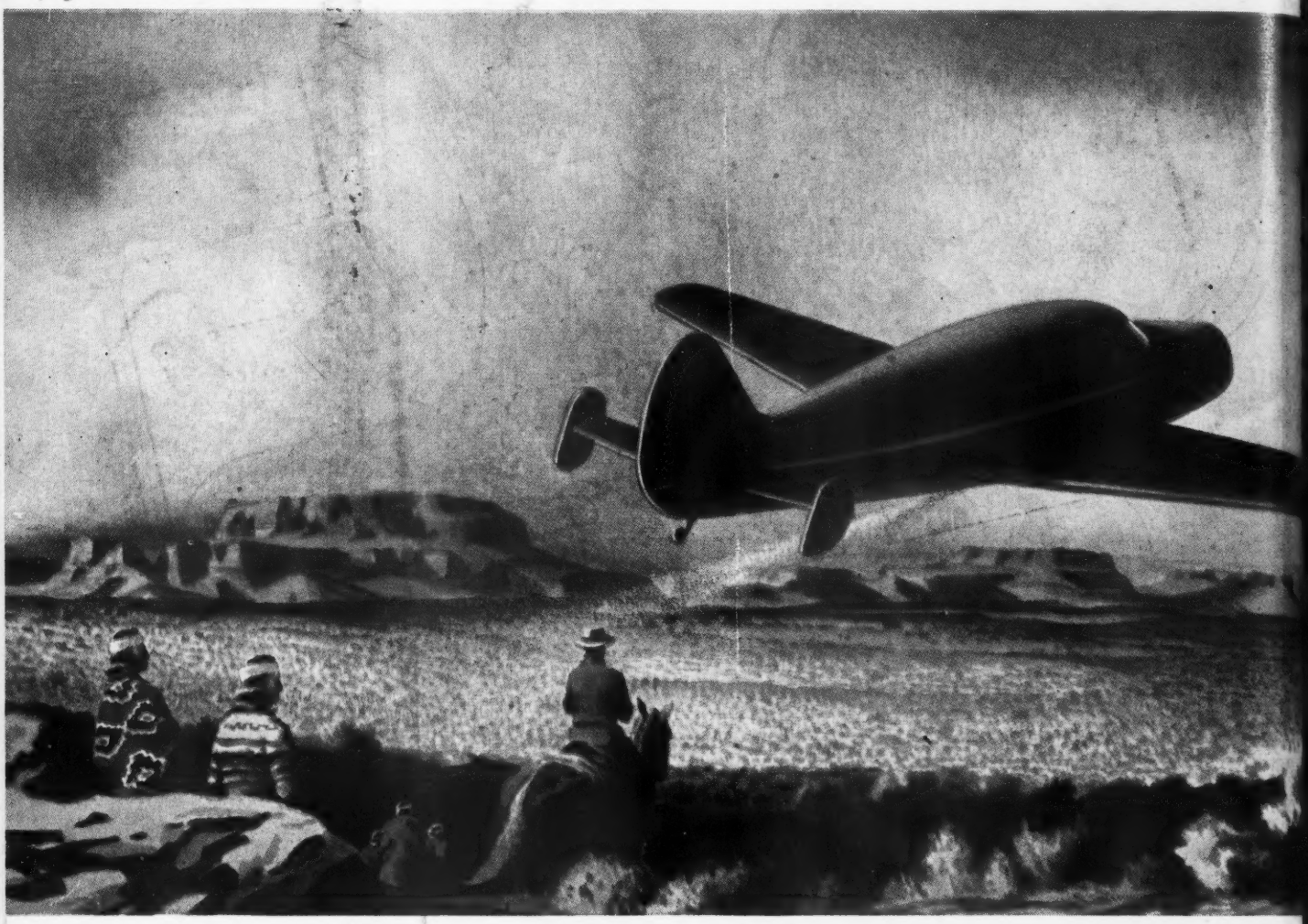
Burd "Graf-Flox" Piston Rings are available in "Engineered for Results" Combination Sets for all cars, trucks, tractors, buses, compressors and stationary engines.



BURD PISTON RING CO. • ROCKFORD, ILLINOIS

What's The Limit?

Denuded pasture lands in Arizona are being replanted with hardy, dry-weather Lovegrass by using a plane to sow seeds encased in clay, fertilizer, insect and rodent repellents. *A strip 1,000 feet wide, with one pellet per square foot, is planted as the plane flies along!*



IS *Porous Chrome* THE ENGINE-LIFE PISTON RING?

We can't give you the final answer to that question yet. However, we can tell you that more than 7,000,000 miles of road tests in all types of service—from the stop-and-go of door-to-door delivery to the steady grind of cross-country hauling—have proved that Porous Chrome [VAN DER HORST PROCESS] multiplies piston ring life by four—*even five!* We can tell you that the fine honing action of these rings causes the entire set to seat within the first hour of operation, thus eliminating the costly wear of the break-in period. We can tell you that American Hammered Porous Chrome rings *cut cylinder wear in half!*

These amazing piston rings, which have set new standards of performance in the aviation, truck, and bus fields, will shortly be available for many makes of passenger cars. Ask your American Hammered piston ring jobber about them *today!* Koppers Company, Inc., Piston Ring Division, Box 626, Baltimore 3, Maryland.

K KOPPERS

American Hammered Piston Rings